



## **HIV IN THE WHO AFRICAN REGION**

**Progress towards achieving  
Universal Access to priority health  
sector interventions**

**2013 UPDATE**

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# CONTENTS

<b>FOREWORD</b>	<b>v</b>
<b>ACKNOWLEDGEMENTS</b>	<b>vii</b>
<b>ABBREVIATIONS AND ACRONYMS</b>	<b>viii</b>
<b>EXECUTIVE SUMMARY</b>	<b>ix</b>
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Background	1
1.2 Focus of the report	2
1.3 Data sources	2
1.4 Structure of the report	3
<b>2 EPIDEMIOLOGICAL SITUATION OF HIV IN THE WHO AFRICAN REGION</b>	<b>7</b>
2.1 Introduction	7
2.2 Implementation of HIV surveillance systems in the WHO African Region	8
2.3 Trends in HIV prevalence in adults	13
2.4 Young people aged 15- 24 years	23
2.5 HIV prevalence among key populations	34
2.6 Sexually Transmitted Infections (STIs)	37
2.7 Challenges and the way forward	38
<b>3 HIV TESTING AND COUNSELLING</b>	<b>43</b>
3.1 Introduction	43
3.2 Uptake of HIV testing and counselling	44
3.3 Coverage of HIV testing and counselling services	46
3.4 Trends in the coverage of HIV testing and counselling services	51
3.5 Expanding HIV testing and counselling through novel mechanisms and approaches	52
3.6 Serodiscordant couples and HIV testing and counselling	54
3.7 Challenges and the way forward	54

<b>4</b>	<b>MAXIMIZING THE CONTRIBUTION OF THE HEALTH SECTOR IN HIV PREVENTION</b>	<b>57</b>
4.1	Introduction	57
4.2	Policies and programmes	58
4.3	HIV prevention among young people	58
4.4	HIV prevention among key populations	59
4.5	Voluntary medical male circumcision (VMMC)	64
4.6	Blood safety	68
4.7	Challenges and the way forward	68
<b>5</b>	<b>HIV PREVENTION AND TREATMENT AMONG WOMEN AND CHILDREN</b>	<b>73</b>
5.1	Introduction	73
5.2	HIV testing and counselling among pregnant women	75
5.3	Providing antiretroviral medicine to pregnant women living with HIV for preventing mother to child transmission of HIV	76
5.4	Reduction in AIDS related maternal deaths	79
5.5	Early Infant diagnosis for HIV	80
5.6	Antiretroviral treatment for HIV positive-children	81
5.7	Unmet need for family planning	85
5.8	Challenges and the way forward	86
<b>6</b>	<b>SCALING UP TREATMENT AND CARE FOR PEOPLE LIVING WITH HIV</b>	<b>89</b>
6.1	Introduction	89
6.2	Coverage of antiretroviral therapy among people living with HIV	90
6.3	Availability of anti-retroviral therapy facilities	92
6.4	Retention of people living with HIV on antiretroviral therapy	93
6.5	TB/HIV collaborative activities	95
6.6	Surveillance and monitoring of HIV Drug Resistance (HIVDR)	97
6.7	Impact of antiretroviral therapy	100
6.8	Challenges and the way forward	101
<b>7</b>	<b>LOOKING FORWARD</b>	<b>105</b>
	<b>ANNEXES</b>	<b>109</b>
	Annex 1: ART facilities in the WHO African Region	109
	Annex 2: Selected indicators in TB-HIV collaborative activities, WHO African Region, 2001-2012	110

# FOREWORD

This report is being released by the WHO Regional Office for Africa on the occasion of World AIDS Day 2013. It provides updated information, at regional and sub-regional level, and in some countries, on the epidemiological situation of HIV and progress made so far towards achieving Universal Access to HIV prevention, treatment, care and support in the WHO African Region.

The report shows that remarkable progress has been made in expanding and scaling up health sector HIV prevention, treatment, care and support interventions and services in the past years. Countries in the African Region are on the right track “to have halted by 2015 and begun to reverse the spread of HIV/AIDS”. HIV prevalence among ANC attendees in the region has declined from 9.5% in 2000 to 3.5% in 2011/2012. Indeed, HIV prevalence among ANC attendees has declined in more than half of the countries in the region and for many others prevalence rates are stabilising or beginning to decline. However, on the whole, HIV prevalence rates remain unacceptably high, especially in southern and eastern Africa.

Progress has also been made towards the elimination of mother to child transmission of HIV. Coverage rates for HIV testing and counselling among pregnant women have increased and uptake of ARV for PMTCT has improved substantially with 63% of pregnant women living with HIV having received ARV for PMTCT in the region in 2012, an increase from 34% in 2009.

The report also highlights the progress made in the scaling-up of life-saving and infection-prevention HIV treatment, with a total of 7,524,000 people in need receiving antiretroviral therapy by the end of December 2012, an increase of more than 90% from December 2009. These achievements have all been possible through the collective efforts of many partners led by African governments. There has been significant financial investment in the HIV/AIDS response by governments and partners. Drugs and commodities have been made more accessible in all countries, innovative ways of delivering services have been expanded, activism has promoted visibility of the HIV/AIDS epidemic and especially people living with HIV have been at the forefront of the response.

The report also highlights challenges in the current HIV response that need to be addressed. New HIV infections are still occurring at unacceptably high rates. Most people in the region are unaware of their HIV status. Access to HIV prevention and treatment interventions and services still remains inadequate, especially for vulnerable and key populations. A significant proportion of people still drop out of care and many national HIV

programmes in the region are heavily dependent on international financial resources.

I would like to use this occasion to call on all governments to commit more resources and work closely with all stakeholders to intensify efforts towards attaining the set goals and targets agreed upon in national, regional and international declarations and commitments.



Dr Luis Gomes Sambo  
WHO Regional Director for Africa

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**The principal authors of the report were:** Godwill Asiiimwe-Okiror, Frank Lule, Isseu Toure, Buhle Ncube, Innocent Nuwagira, Nirina Razakaso, Boniface Ekoue Kinvi, Jesus-Maria Garcia Calleja, Michel Beusenber. Assimawe Pana and Emil Asamoah-Odei.

**The report was reviewed by the following:** Etienne Minkoulou, Daniel Kibuga, Morkor Newman-Owiredu, Andre Loua, Guy-

Michel Gershy-Damet, Kouadio Yeboue, Patrick Kombate, Lori Newman, Chika Hayashi, Lisa Nelson, Awandha Mamahit, and Nathan Shaffer.

**The design and layout** for the report was done by Assamala Amoi-Seminet and Phyllis Jiri of the World Health Organization Regional Office for Africa.

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# ABBREVIATIONS & ACRONYMS

AFRO	WHO Regional Office for Africa	MTCT	Mother to Child Transmission
AIDS	Acquired Immunodeficiency Syndrome	PEPFAR	President's Emergency Plan for AIDS Relief
AIS	AIDS Indicator Survey	PITC	Provider Initiated Testing and Counselling
ANC	Ante-natal Clinic	PLHIV	People Living with HIV
ART	Antiretroviral Therapy	PMTCT	Prevention of Mother to Child Transmission
ARVs	Antiretrovirals	PWID	People WHO Inject Drugs
BSS	Behavioural Surveillance Surveys	SADC	Southern Africa Development Community
CDC	Centres for Disease Control and Prevention	SSA	Sub-Saharan Africa
CPT	Cotrimoxazole Preventive Therapy	STIs	Sexually Transmitted Infections
DHS	Demographic and Health Survey	TB	Tuberculosis
DHS+	Demographic and Health Survey plus HIV Testing	UA	Universal Access
DRC	Democratic Republic of Congo	UN	United Nations
EMTCT	Elimination of Mother to Child Transmission	UNAIDS	Joint United Nations Programme on AIDS
EID	Early Infant Diagnosis	UNGASS	United Nations General Assembly Special Session
GARPR	Global AIDS Response Progress Reporting	UNFPA	United Nations Population Fund
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria	UNICEF	United Nations Children's Fund
HIV	Human Immunodeficiency Virus	UNODC	United Nations Office on Drug and Crime
HTC	HIV Testing and Counselling	USAID	United States Agency for International Development
IBBS	Integrated Biological and Behavioural Survey	VCT	Voluntary Counselling and Testing
MC	Male Circumcision	VMMC	Voluntary Medical Male Circumcision
MDGs	Millennium Development Goals	WHO	World Health Organization
MSM	Men who have Sex with Men		

# EXECUTIVE SUMMARY

An updated ‘HIV/AIDS: Strategy for the African Region’ was adopted by the WHO Regional Committee for Africa during its sixty-second session held in November 2012. The strategy provides directions for implementing, in the WHO African Region, the ‘*WHO Global Health Sector Strategy on HIV/AIDS 2011-2015*’ which was adopted by the World Health Assembly in May 2011. The set targets in the regional strategy are; to reduce the proportion of infected young people aged 15-24 years by 50%, reduce new HIV infections in children by 90% with special emphasis on those aged below two years, reduce HIV related deaths by 25% and HIV related tuberculosis deaths by 50%, compared with the 2004 baseline by 2015 (3). The targets, which are in line with the global targets, are based on the 2009 baseline data.

This report “HIV in the WHO African Region; Progress towards achieving Universal Access to priority health sector interventions, 2013 Update” provides updated information, at regional and sub-regional level, and in some countries on the epidemiological situation of HIV and progress made so far towards achieving Universal Access to HIV prevention, treatment, care and support in the WHO African Region mainly using data from 2007 to 2012. The interventions and services assessed are those that are relevant to the epidemiological and social

context of the HIV epidemic in the region. These include HIV testing and counselling, selected health sector HIV interventions: among key populations, the youth, male circumcision, management of STIs, blood safety, preventing mother to child transmission (PMTCT), providing antiretroviral therapy and TB/HIV collaborative services. The report also provides trends in HIV prevalence and sexual behaviours among young people aged 15-24 years.

## **Epidemiological situation**

Current data on HIV prevalence and trends in the WHO African Region show that countries in the region are on the right track “to have halted by 2015 and begun to reverse the spread of HIV/AIDS”. HIV prevalence among ANC attendees in the region has declined from 9.5% in 2000 to 3.5% in 2011/2012. Indeed, HIV prevalence among ANC attendees has declined in more than half of the countries in the region and for many others prevalence rates are stabilising or beginning to decline. However, on the whole, HIV prevalence rates remain unacceptably high, especially in southern and eastern Africa. Population based HIV prevalence data continue to indicate that more women than men are infected with HIV with the largest disparities being seen in the 15-24 year age group.

HIV surveillance systems have generally improved over time with many countries conducting national population based surveys to complement HIV sentinel surveillance among pregnant women attending antenatal care. More countries have expanded their ANC sentinel HIV surveillance to improve rural and urban representation. However, the conduct of ANC-based HIV sentinel surveillance in the last few years has become inconsistent in several countries and in most countries HIV surveillance in key populations and STI surveillance are inadequate. The available data show that key populations continue to have consistently higher HIV prevalence rates than those in the general population and among ANC attendees.

### **HIV testing and counselling**

The adoption of a policy of provider-initiated testing and counselling (PITC) coupled with decentralization and integration of HIV testing and services into other health programmes and the adoption of community-based approaches for HIV testing and counselling have played a key role in increasing the availability and uptake of HIV testing and counselling services. The number of people aged 15 years and above who received an HIV test and were counselled increased from 23,424,868 in 2007 to 44,997,719 in 2010 in the WHO African Region, an increase of more than 90%. Despite this progress, the majority of people in the WHO African Region do not know their HIV serostatus. Adolescents, rural residents,

the less educated, the less wealthy and men are less likely to be tested and counselled for HIV. All people including those in rural areas, adolescents and key populations should be motivated to test and know their HIV serostatus through the use of multiple models and approaches.

### **Maximizing the contribution of the health sector in HIV prevention**

A review of the 2012 country Global AIDS Response Progress reports showed that countries in the WHO African Region have HIV prevention programmes that target young people. Steadily but slowly young people are adopting safer sexual behaviours and their level of comprehensive knowledge of HIV is increasing. However, the level of comprehensive knowledge of HIV remains relatively low. Early sexual debut, multiple sexual partners and premarital sex are common, and condoms are not always used during higher risk sex and premarital sex. Active engagement of young people in the design, planning, implementation, monitoring and evaluation of age appropriate youth-friendly HIV services should be encouraged at all levels in the national HIV/AIDS response. A systematic review of studies conducted between 2000 and 2011 among sex workers that reported having interventions for reducing HIV transmission among sex workers concluded that there was “virtually no country in the WHO African Region providing interventions for sex workers on an adequate scale and intensity.” The same is true for other key populations. Structural and legal barriers

make it difficult for key populations to access HIV prevention, treatment, care and support services. These barriers need to be identified and addressed in the national HIV response.

As a result of strong leadership, commitment and good planning, progress has been made in the 14 priority countries in the WHO African Region implementing voluntary medical male circumcision (VMMC) programmes. A total of 1,710,531 VMMCs were performed in 2012 in the 14 priority countries, more than double the number (884,283) in 2011. Kenya and Ethiopia have so far reached coverage of about 60% of the 80% target required for a public health impact on HIV incidence. However, there is low uptake of VMMC services, especially among men aged 25-49 years, and coverage in several countries remains low. Countries will need to sustain and improve on the achievements made so far, including intensifying efforts to mobilize communities and to raise the level of awareness of the public health benefits of VMMC.

Progress has been made with regards to blood safety in the region. However, only 45% of the total blood requirements is currently being met. Countries need to further increase investments in blood safety programmes.

### **HIV prevention and treatment among women and children**

Considerable progress has been made towards the elimination of mother to child transmission of HIV in the WHO African

Region since 2009. Coverage rates for HIV testing and counselling among pregnant women increased from 38% in 2009 to 50% in 2012. The uptake of ARV for PMTCT has improved substantially with 63% of pregnant women living with HIV in the region receiving ARVs in 2012, an increase from 34% in 2009. In addition, the coverage of antiretroviral therapy among HIV infected children is steadily improving, but remains low with only 33% receiving ARVs in 2012. Similarly, early diagnosis of HIV among exposed infants remains low in most of the countries in the region. The low virological testing rates among exposed infants coupled with loss-to-follow up of exposed infants may largely explain the low ART coverage among children.

Big countries in the region such as the Democratic Republic of Congo, Ethiopia and Nigeria which contribute the highest number of pregnant women living with HIV have been facing challenges in providing PMTCT services and will need to step up their efforts. This will require more investment in the programming of PMTCT interventions especially financial and human resources, more training and capacity building for health providers, task shifting policies and other measures to address the human resource challenges, strengthened laboratory capacity, further integration of PMTCT services in other related health programmes and further decentralization of services.

## Scaling up treatment and care for people living with HIV

The scaling-up of life-saving and infection -prevention HIV treatment in the WHO African Region constitutes one of the great public health achievements during the past decade. By the end of December 2012, a total of 7,524,000 (68%) people in need of ARVs were receiving antiretroviral therapy, an increase of more than 90% from 3,192,000 in December 2009. The achievements are a reflection of strong political commitment, community mobilization, technical innovation, and increasing domestic and international funding. The main factors driving the increase in access to ART include the steep rise in the numbers of facilities providing ART services, expansion of access to ART beyond hospitals by decentralizing ART services to primary health care facilities and rural areas, adoption of task-shifting policies, capacity building, and domestic and international funding. Improved access to antiretroviral therapy is already beginning to increase life expectancy in some countries.

Despite the dramatic gains, about 32% of eligible people living with HIV and in need are not receiving antiretroviral medicines and in several countries the pace of progress is slow. Nigeria with the second highest number of people living within the WHO African Region had an ART coverage of 36% in 2012, and similarly Democratic Republic of Congo also with a high number of people living with HIV had coverage of 38% in 2012. Men are less likely to be on antiretroviral medicines than women.

In 2011, men comprised only 36% of the people receiving ART but constituted 44% of the people eligible for ART. Retention of people in the HIV treatment cascade is a challenge at each step in the cascade. Attrition rates are relatively high, and are mainly due to loss-to-follow up.

Good progress is being made in the implementation of TB/HIV collaborative activities. Coverage of antiretroviral therapy among people with TB/HIV increased from 37% in 2009 to 57% in 2012, and 74% of TB patients knew their HIV serostatus, up from 69% in 2011. Eighty percent of people with TB and HIV are receiving cotrimoxazole prophylaxis. However, there is low coverage of isoniazid preventive therapy among people living with HIV and screening for TB among people living with HIV is relatively low.

Maintaining the quality of HIV treatment and care services and retention of people on ART in the HIV treatment cascade are key in ensuring greater benefits of antiretroviral therapy and to minimize emergence of HIV drug resistance. Greater investments in health systems strengthening will be required to address the implications of implementing the 2013 WHO guidelines on antiretroviral treatment in order to achieve universal access and maximize the impact of ART in the region.

## Looking forward

Countries in the WHO African Region have made significant progress in expanding and scaling up health sector HIV prevention, treatment, care and

support interventions and services in the past years. This has resulted in declines in new HIV infections and AIDS related deaths. However there is the need to intensify efforts in order to meet the 2015 regional targets as set out in the Regional HIV/AIDS Strategy.

The WHO Regional Committee Resolution - “The WHO Consolidated Guidelines on the Use of Antiretroviral Drugs for

treating and preventing HIV Infections; Recommendations for a Public Health Approach- Implications for the African Region” - which was adopted by African Ministers of Health in September 2013, provides the policy framework for countries in the WHO African Region to scale-up their national response to HIV/AIDS in order to attain the 2015 HIV targets and move towards an “AIDS-Free Generation”.



# 1. INTRODUCTION

## 1.1 Background

The global community, including Member States of the World Health Organization (WHO) African Region, committed itself to achieving Universal Access (UA) to HIV prevention, treatment and care services by 2015 in the 2011 United Nations (UN) Political Declaration on HIV/AIDS (1). This was a follow-up to the 2006 UN Political Declaration on HIV and AIDS to rapidly scale up access to HIV prevention, care, treatment and support (2).

An updated *“HIV/AIDS: Strategy for the African Region”* was adopted by the WHO Regional Committee for Africa during its sixty-second session held in November 2012 (3). The updated HIV/AIDS Strategy provides directions for implementing, in the WHO African Region, the ‘WHO Global Health Sector Strategy on HIV/AIDS 2011-2015’ which was adopted by the World Health Assembly in May 2011 (4). The Regional Strategy takes into account the regional specificities and context and defines the health sector’s contribution to the multisectoral response to HIV/AIDS in the region for the period 2012-2015 (3).

The set targets in the 2013 ‘HIV/AIDS: Strategy for the WHO African Region’ are; to reduce the proportion of infected young people aged 15-24 years by 50%,

reduce new HIV infections in children by 90% with special emphasis on those aged below two years, reduce HIV related deaths by 25% and HIV related tuberculosis deaths by 50%, compared with the 2004 baseline by 2015 (3). The targets, which are in line with the global targets, are based on the 2009 baseline data.

Substantial progress has been made in the WHO African Region in expanding access to interventions and services for HIV prevention, treatment, care and support since the launch of the WHO led “3 by 5” initiative in 2003 (5). Overall there was a decline of 38.5% in new infections between 2001 and 2012 (6). There was a decline of 38% in new HIV infections among children between 2009 and 2012 in the 21 Global Plan Priority countries for the elimination of mother-to-child transmission in the region (7). These gains are in line with the MDG-6 target “Have halted by 2015 and begun to reverse the spread of HIV/AIDS”. AIDS related deaths have also significantly reduced by 20% between 2001 and 2012 in the region with eleven countries reporting declines ranging from 24% to 73% (6).

Despite these gains, Sub-Saharan Africa (SSA), which has only 12% of the global population, remains the region most



severely affected by HIV/AIDS. At the end of 2012, there were 25.5 million people living with HIV in SSA, accounting for more than two-thirds (71%) of the total global HIV infections. The number of people living with HIV continues to increase largely due to improved access to antiretroviral treatment (people infected with HIV are living longer largely due to receiving life-saving antiretroviral drugs), but also due to new HIV infections. An estimated 1.6 million people were newly infected with HIV in SSA in 2012 (6).

This report *“HIV in the WHO African Region; Progress towards achieving Universal Access to priority health sector interventions, 2013 Update”* is a follow-up to the first report *“HIV in the WHO African Region Progress towards achieving Universal Access to priority health sector interventions 2011 update”* that was published in 2011 (8). The report provides an update on the empirical data generated by HIV surveillance systems and programmes on the delivery of HIV prevention, treatment, care and support services in the WHO African Region. The production of this report reflects one of WHO’s core function of monitoring the health situation and assessing health trends and is in line with the strategic directions for achieving sustainable health development in the WHO African Region 2010-2015 (9).

## **1.2 Focus of the report**

This report provides updated information, at regional and sub-regional level, and in some countries, on the epidemiological situation of HIV and progress made so

far towards achieving Universal Access to HIV prevention, treatment, care and support in the WHO African Region, mainly using data from 2007 to 2012. The interventions and services assessed are those that are relevant to the epidemiological and social context of the HIV epidemic in the region. These include HIV testing and counselling, selected health sector HIV interventions among key populations, the youth, male circumcision, management of STIs and blood safety, preventing mother to child transmission (PMTCT), providing antiretroviral treatment and TB/HIV collaborative services. The report also provides trends in HIV prevalence and sexual behaviours among young people aged 15-24 years.

The report is targeted at all in-country stakeholders, including Ministries of Health, National AIDS Councils/Commissions, and Civil Society, and at donors and International Development Partners, including United Nations Agencies. It can be used as a tool for advocacy and resource mobilization and for encouraging countries to consolidate the progress so far made, and to intensify efforts towards attaining the regional and country goals and targets, including regional and international commitments.

## **1.3 Data sources**

The data used in describing the epidemiological situation of HIV in the region are mainly based on the most recent reports of HIV surveillance systems in the African Region primarily for the period

2007 to 2012, country Global AIDS Response Progress Reports (GARPR) for 2012 and the MEASURE HIV/AIDS indicators database.

The data used in monitoring progress in the health sector interventions are mainly from the WHO/AFRO Regional HIV/AIDS database, WHO, UNAIDS and UNICEF publications, the WHO Global Health Observatory database, 2012 country GARPR reports, published scientific articles, the websites of UN agencies and other international organizations working on HIV/AIDS in Sub-Saharan Africa.

Countries in the WHO African Region have been grouped according to the geographical distribution of countries used by the WHO Regional Office for Africa (AFRO). The same categorization was used in the last report produced in 2011. This allows for comparisons and assessment of the changes since then. The countries in the sub regions are as follows:

**Eastern African subregion:** Eritrea, Ethiopia, Kenya, Rwanda, Seychelles, Uganda and United Republic of Tanzania

**Southern Africa sub region:** Botswana, Comoros, Lesotho, Madagascar, Malawi, Mauritius, Moza-ambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.

**Central Africa Sub region:** Angola, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon, and Sao Tome and Principe.

**Western Africa Sub region:** Algeria, Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

This report does not include data on South Sudan that only joined the WHO African Region in May 2013.

## 1.4 Structure of the report

The report is structured as follows:

**Chapter 1** presents background information and outlines the focus of the report, the data sources and methods used to collect data that describe the HIV epidemiological situation, and to monitor progress towards Universal Access to health sector HIV prevention, treatment, care and support interventions and services in the WHO African Region.

**Chapter 2** provides an update of the HIV epidemiological situation and trends based mainly on an analysis of data generated by HIV surveillance systems in the WHO African Region.

**Chapter 3** presents the progress made in improving availability and uptake of HIV testing and counselling services in the WHO African Region.

**Chapter 4** describes the progress made in scaling up selected health interventions for HIV prevention in the WHO African Region.

**Chapter 5** presents progress made in scaling up HIV prevention and treatment services for eliminating HIV infection in children and keeping their mothers alive in the WHO African Region.

**Chapter 6** presents progress towards scaling up HIV treatment and care for

people living with HIV in the WHO African Region, implementation of TB/HIV collaborative activities and monitoring of HIV drug resistance (HIVDR).

**Chapter 7** presents the way forward.

# REFERENCES

1. United Nations. United Nations General Assembly Resolution 65/277. Political Declaration on HIV and AIDS 2011. [www.unaids.org/en/aboutunaids/unitednationsdeclarationandgoals/2011Highlevelmeetingonaids](http://www.unaids.org/en/aboutunaids/unitednationsdeclarationandgoals/2011Highlevelmeetingonaids), accessed 13 September 2013
2. United Nations. United Nations General Assembly Resolution 60/262 Political Declaration on HIV/AIDS 2006. [www.unaids.org/en/aboutunaids/unitednationsdeclarationandgoals/2006politicaldeclarationonhivaids](http://www.unaids.org/en/aboutunaids/unitednationsdeclarationandgoals/2006politicaldeclarationonhivaids), accessed 13 September 2013
3. WHO/AFRO. HIV/AIDS: Strategy for the WHO African Region. 2013. WHO/AFRO, Brazzaville.
4. WHO. Global health sector strategy on HIV/AIDS 2011-2015. 2011. WHO, Geneva.
5. WHO and UNAIDS. '3 by 5' Progress report December 2004. 2004. WHO Geneva
6. UNAIDS. Global Report UNAIDS Report on the global AIDS epidemic 2013. 2013. UNAIDS, Geneva.
7. UNAIDS. 2013 Progress Report on the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive. June 2013. UNAIDS, Geneva.
8. WHO/AFRO. HIV in the WHO African Region Progress towards achieving Universal Access to priority health sector interventions 2011 Update. 2011. WHO/AFRO, Brazzaville.
9. WHO/AFRO. Achieving sustainable Health Development in the African Region Strategic Directions for WHO 2010-2015. 2010. WHO/AFRO, Brazzaville.
10. WHO and UNAIDS. '3by5' Progress Report December 2004. 2004. WHO, Geneva



## 2. EPIDEMIOLOGICAL SITUATION OF HIV IN THE WHO AFRICAN REGION

### Key messages

- HIV prevalence among ANC attendees has declined in more than half of the countries in the WHO African Region and for many others, HIV prevalence rates are stabilizing or beginning to decline.
- The HIV epidemic in the WHO African Region is diverse and has wide variations across sub-regions and between countries with southern Africa remaining the most disproportionately affected subregion by the epidemic.
- HIV prevalence rates are much higher in women than men with the largest disparities being seen in the 15-24 year age group.
- HIV prevalence rates are much higher in urban areas than in rural areas in most countries. However, the gap is narrow in most of the countries in southern Africa.
- Key populations continue to consistently have much higher HIV prevalence rates than the general population and ANC attendees
- HIV surveillance systems have improved over time with many countries conducting population based HIV serosurveys and behavioural surveillance to complement ANC based HIV sentinel surveillance.

### 2.1 Introduction

With more than two-thirds (71%) of the total number of people living with HIV in the world, Sub-Saharan Africa remains the region most affected by the HIV/AIDS epidemic. As at the end of 2012, an estimated 25.5 million people were living with HIV in the region, an increase from the previous years as more people are living longer as a result of receiving life-saving antiretroviral therapy but also due to new infections (1).

There has been a decline of 38.5% in new HIV infections between 2001 and 2012 in Sub-Saharan Africa (1). HIV prevalence data among ANC attendees

and from national population based surveys conducted in the WHO African Region confirm that prevalence rates have declined or stabilized in most of the countries (2). However, HIV continues to spread in the region, with 1.6 million new infections in 2012 (1).

At the global level, young people aged 15-24 years accounted for 42% of new infections, with nearly 80% of them living in Sub-Saharan Africa (3)

This chapter presents an update on the magnitude and trends in HIV prevalence in countries and sub-regions in the WHO African region since the last report “HIV

in the WHO African Region Progress towards achieving Universal Access to priority health sector interventions: 2011 update” was published in 2011(2). It is mainly based on empirical data generated by HIV surveillance systems in the region for the period 2007 to 2012. For trend analysis in HIV prevalence rates, the data presented goes back to 2001. The chapter also presents HIV prevalence and trends in sexual behaviours among young people aged 15-24 years.

## **2.2 Implementation of HIV surveillance systems in the WHO African Region**

With the support of WHO and other development partners almost all the countries in the WHO African Region are implementing second generation HIV surveillance systems. Second generation surveillance systems monitor trends in HIV infection and trends in sexual behaviours and attempt to capture the diversity of the HIV epidemic in different areas and populations within countries (4).

Second generation HIV surveillance systems include surveillance of HIV among pregnant women attending selected antenatal care clinics (ANC), population-based HIV serosurveys and gathering behavioural data mainly from Demographic and Health surveys (DHS), AIDS Indicator Surveys (AIS), Integrated Biological and Behavioural Surveys (IBBS) and Behavioural Surveillance Surveys (BSS). Additional data are drawn from STI surveillance among ANC attendees, HIV surveillance among key populations and special studies.

### **2.2.1 HIV surveillance among pregnant women**

Sentinel HIV surveillance among ANC attendees has been the main source of information on trends in HIV prevalence in Sub-Saharan Africa. The data generated have also been utilized to produce national HIV/AIDS estimates.

In the early phases of the establishment of HIV surveillance systems, antenatal clinic sites were selected mostly in urban areas and in sites with high HIV prevalence. Over time, HIV sentinel surveillance systems have evolved to include more rural sites, thus increasing geographical and rural-urban representation (5).

Countries in the WHO African Region conduct HIV surveillance among ANC attendees once a year or every two years depending on the national HIV sentinel surveillance guidelines/protocol. This is in accordance with the WHO guidelines on conducting HIV sentinel surveillance among ANC attendees (6). South Africa uses probability proportional to size to enrol ANC attendees for HIV surveillance. This approach produces a more representative sample of ANC attendees but requires substantial resources, which is a challenge to most of the countries in the region. Twenty-six out of the 47 countries in the WHO African Region conducted a round of sentinel surveillance among ANC attendees in the period 2010 to 2012 and an additional 8 countries had a last round of ANC surveillance in 2009. A number of countries are not conducting ANC surveillance regularly (Table 2.1).

**Table 2.1: Last round of HIV sentinel surveillance among ANC attendees by country and subregion, WHO African Region, most recent year**

Sub region	Country	2007	2008	2009	2010	2011	2012
Southern Africa	Botswana						
	Comoros*						
	Lesotho						
	Madagascar*						
	Malawi						
	Mauritius						
	Mozambique						
	Namibia						
	South Africa						
	Swaziland						
	Zambia						
	Zimbabwe						
	Eastern Africa	Eritrea					
Ethiopia							
Kenya							
Rwanda							
Seychelles							
Uganda							
United Republic of Tanzania							
Central Africa	Angola						
	Burundi						
	Cameroon						
	Central Africa Republic						
	Chad						
	Congo						
	Democratic Republic of Congo						
	Equatorial Guinea						
	Gabon						
	Sao Tome and Principe						
Western Africa	Algeria						
	Benin						
	Burkina Faso						
	Cape Verde*						
	Cote d'Ivoire						
	Gambia						
	Ghana						
	Guinea						
	Guinea Bissau						
	Liberia						
	Mali						
	Mauritania						
	Niger*						
	Nigeria						
	Senegal						
	Sierra Leone						
	Togo						

Sources: GARPR country reports 2012, Country ANC HIV surveillance reports in selected countries and WHO/AFRO surveillance updates 2003, 2005 and 2007

\*: Comoros, Cape Verde, Madagascar and Niger have not conducted any ANC surveillance round in the period 2007 to 2012



## 2.2.2 Population based surveys

Population based surveys provide useful information on HIV prevalence data in men, women (non-pregnant and pregnant women) and in people not using health facilities. Fifty-seven national population based surveys were conducted in 30 countries in the WHO African Region between 2001 and 2012 of which 22 incorporated HIV testing (Table 2.2). Countries that conducted repeat surveys where HIV testing was incorporated were able to monitor HIV prevalence trends in the general population. Countries that did not include HIV testing were able to assess trends in sexual behaviours. These surveys are usually conducted once every five years. However, due to the distribution of HIV infection in concentrated epidemics, sampling from households may not represent high risk mobile populations. Thus population based

surveys are not appropriate for estimating prevalence levels in countries with such epidemics; they tend to underestimate the HIV prevalence (7)

Monitoring of sexual behaviours using behavioural surveys is vital in increasing understanding of the factors driving the HIV epidemic. It helps to explain the patterns and trends in HIV infection. DHS and AIS are the main sources of data on behaviours in the WHO African Region. Other sources of behavioural data in the region include Multiple Indicator Cluster Surveys (MICs), Behavioural Surveillance Surveys (BSS) and Integrated Biological Behavioural Surveys (IBBS) conducted mainly among the youth and special groups. Additional sexual behavioural data has been generated by special studies including cohort studies conducted in a number of countries in the region.

**Table 2.2: Implementation of population based surveys, WHO African Region, most recent year**

Sub region	Country	Year of survey	Type of survey	Study population
Southern Africa	Lesotho	2004	DHS+	women 15-49, men 15-59
		2009	DHS+	Women 15-49, men 15-59
	Malawi	2004	DHS+	Women 15-49, men 15-59
		2010	DHS+	Women 15-49 , men 15-59
	Mozambique	2009	AIS	Women 15-49, men 15-59
	Zambia	2001-2002	DHS+	Women 15-49, men 15-59
		2004	DHS	Women and men 15-49 years
		2007	DHS	Women 15-49, men 15-59
	Swaziland	2006-2007	DHS+	Women 15-49, men 15-59
		2001-2002	Young adult survey	Women and men 15-29
	Zimbabwe	2005-2006	DHS+	Women 15-49, men 15-59
		2010-2011	DHS+	Women 15-49, men 15-59
		2002	HIV/AIDS	2years and above
	South Africa	2004-2005	HIV/AIDS	2 years and above
Eritrea		2012	DHS	Women 15-49,men 15-59
Eastern Africa	Ethiopia	2005	DHS+	Women 15-49, men 15-59
		2011	DHS+	Women 15-49, men 15-59
	Kenya	2003	DHS+	Women 15-49, men 15-59
		2008-2009	DHS+	Women 15-49,men 15-59
		2012	AIS	Children 18 monts14 years, Women and men 15-64
	Rwanda	2005	DHS+	Women 15-49, men 15-59
		2010	DHS+	Women 15-49, men 15-59
	Uganda	2004	HIV/AIDS	0-4 years, women 15-49, men 15-59
		2007	DHS	Women 15-49, men 15-59
		2011	AIS	0-14 years, women 15-49, men 15-59
United Republic of Tanzania	2003	AIS	0-4 years, 15-49 women and men	
	2006	AIS/MIS	Women 15-49 , men 15-49	
	2012	AIDS/Malaria survey	Women 15-49, men 15-59	
Central Africa	Burundi	2002	HIV/AIDS	Women and men 12 years and above
		2010	DHS+	Women 15-49, men 15-59
	Cameroon	2004	DHS+	Women 15-49, Men 15-59
		2011	DHS+	Women 15-49, men 15-59
	Congo	2007	DHS+	Women 15-49, men 15-59
		2009	AIS	Women 15-49, men 15-59
	DRC	2007	DHS	Women 15-49, men 15-59
	Gabon	2012	DHS+	Women 15-49, men 15-59
	Sao Tome and Principe	2008-2009	DHS+	Women 15-49, men 15-59

**Cont'd: Table 2.2: Implementation of population based surveys, WHO African Region, most recent year**

Sub region	Country	Year of survey	Type of survey	Study population
Western Africa	Benin	2006	DHS	Women 15-49, men 15-49
		2012	DHS	Women 15-49, men 15-59
	Burkina Faso	2003	DHS+	Women 15-49, men 5-49
		2010	DHS+	Women 15-49, men 15-49
	Cape Verde	2012	DHS	Women 15-49, men 15-49
	Cote d'Ivoire	2005	AI5	Women 15-49, men 15-49
		2011-2012	DHS+	Women 15-49, men 15-59
	Ghana	2003	DHS+	Women 15-49, men 15-59
		2008	DHS	Women 15-49, men 15-59
	Guinea	2005	DHS+	Women 15-49, men 15-59
	Liberia	2007	DHS+	Women 15-49, men 15-59
	Mali	2001	DHS+	Women 15-49, men 15-59
		2006	DHS+	Women 15-49, men 15-59
	Niger	2002	HIV/AIDS	Women and men 15-49
		2006	DHS+	Women 15-49, men 15-59
	Sierra Leone	2002	HIV/AIDS	Women and men 12-49
		2008	DHS+	Women 15-49, men 15-59
Senegal		2011	DHS	Women 15-49, men 15-59
		2005	DHS+	Women 15-49, men 15-59
		2010-2011	DHS+	Women 15-49, men 15-59

Sources: Country DHS reports, MEASURE HIV/AIDS indicators survey database, Stavetieg, S., et al. 'Demographic Patterns of HIV testing uptake in Sub Saharan Africa DHS comparative reports 30.2013

### 2.2.3 HIV surveillance among key populations

Key populations are those whose sexual behaviours make them vulnerable or who have a higher risk of acquiring HIV infection. Studies among key populations have tended to utilize convenient sampling methods. Peer referral and venue based sampling approaches are mainly used to access key populations in venues/locations that are frequented by them. Key populations are enrolled into studies mainly using social networks (8).

Female sex workers are the key populations most often monitored by HIV surveillance systems in the region. A recent review

conducted in the African Region found that 26 countries conducted biological and behavioural surveillance surveys (IBBS) and or Beha-vioural Surveillance Surveys (BSS) that included HIV testing among sex workers, eighteen countries conducted surveys among Men who have Sex with Men (MSM) and 9 countries among People Who Inject Drugs (PWID) in the period 2008-2012 (8). Other key populations that have been studied in the region include STI patients, migrants, truck drivers, the military, prisoners, cross border traders, fishermen, miners and bridging populations mainly clients of sex workers (9).

The challenge in conducting HIV surveillance among key populations is the lack of a sampling frame that identifies the “members” of these populations. Thus, data from key populations cannot be generalised to a country (8). Difficulties ranging from criminalization to social structural barriers including stigmatization and discrimination make it difficult to access key populations.

#### 2.2.4 STI surveillance

Prevalence/incidence of STIs is an important indicator for risk behaviours. They provide early warning signs for action in the National HIV and AIDS response. Syphilis testing among ANC attendees is supposed to be a routine practice in all countries in the WHO African Region. However, only a few countries are systematically collecting, analysing and reporting on the results of syphilis testing among ANC attendees. Special studies and research conducted in several countries in the region have been valuable sources of data on STIs. Many countries do include STI case reporting based on syndromes in their health information systems. Differences in syphilis testing strategies, health seeking behaviours, self-medication and the strength of STI programmes need to be taken into account when interpreting trends in STI prevalence.

### 2.3 Trends in HIV prevalence in adults in the WHO African Region

HIV prevalence and trends in the WHO African Region using data from HIV sentinel surveillance among ANC

attendees in the period 2007-2012 and population based HIV serosurveys conducted between 2008 and 2012 are presented below. Where necessary, data from earlier periods have been included to show trends.

#### 2.3.1 HIV prevalence among pregnant women aged 15-49 years attending antenatal clinics

Data on HIV prevalence among ANC attendees continue to indicate that the WHO African Region does not have a ‘one African epidemic’. There is a marked diversity in HIV prevalence rates between countries and between sub regions (Table 2.3). The median HIV prevalence among ANC attendees aged 15-49 years in the 26 countries that conducted a round of ANC HIV surveillance in the period 2010 to 2012 was 3.5%. This varied from < 1% in Mauritius, Eritrea, Senegal, Seychelles and Sao Tome and Principe to 41.1% in Swaziland.

HIV prevalence rates among ANC attendees in southern Africa were much higher than HIV rates in other sub regions in 2010-2012. ANC attendees in southern Africa had a median HIV prevalence of 26.5% followed by eastern Africa with a rate of 4.4% and then central Africa with median HIV prevalence of 3.5%. Western Africa had the lowest median HIV prevalence (2.1%) in 2010-2012.

In southern Africa, HIV prevalence rates among ANC attendees ranged from < 1% in Mauritius to 41.1% in Swaziland. In

eastern Africa, prevalence ranged from < 1% in Eritrea to 7.1% in Uganda (2007) while for central Africa, rates ranged from < 1% in Sao Tome and Principe to 7.8% in Cameroon. In western Africa, the rates ranged from < 1% in Algeria, Mauritania and Senegal to 5.8% in Guinea Bissau.

**Table 2.3: Median HIV prevalence (%) among pregnant women aged 15-49 years attending antenatal care in selected countries in the WHO African Region, most recent year**

Subregion	Country	Year	HIV prevalence
Southern Africa	Botswana	2011	30.4
	Lesotho	2011	24.3
	Malawi	2010	10.6
	Mauritius	2010	0.48
	Mozambique	2009	13.9
	Namibia	2010	18.8
	South Africa	2011	29.5
	Swaziland	2010	41.1
	Zambia	2007	14.3
	Zimbabwe	2009	16.1
Eastern Africa	Eritrea	2011	0.8
	Ethiopia	2009	3
	Kenya	2010	6.2
	Seychelles	2012	0.6
	Rwanda	2007	3.7
	Uganda	2007	7.1
	Tanzania	2011	5.1
Central Africa	Angola	2009	2.8
	Burundi	2007	2.8
	Cameroon	2012	7.8
	Central African Republic	2011	4.8
	Chad	2010	3.4
	DR Congo	2011	3.5
	Equatorial Guinea	2008	10
	Gabon	2009	5.2
Sao Tome and Principe	2011	0.5	
Western Africa	Algeria	2007	0.09
	Benin	2010	1.7
	Burkina Faso	2010	1.6
	Cote d'Ivoire	2008	4.5
	Gambia	2011	1.7
	Ghana	2011	2.1
	Guinea	2008	2.5
	Guinea-Bissau	2009	5.8
	Liberia	2011	2.6
	Mali	2009	3.3
	Mauritania	2009	0.48
	Nigeria	2010	4.1
	Senegal	2011	0.95
	Sierra Leone	2010	2.2
	Togo	2010	3.5

Sources: Country GARPR reports 2012, Country ANC HIV surveillance reports of selected countries WHO/AFRO HIV/AIDS database

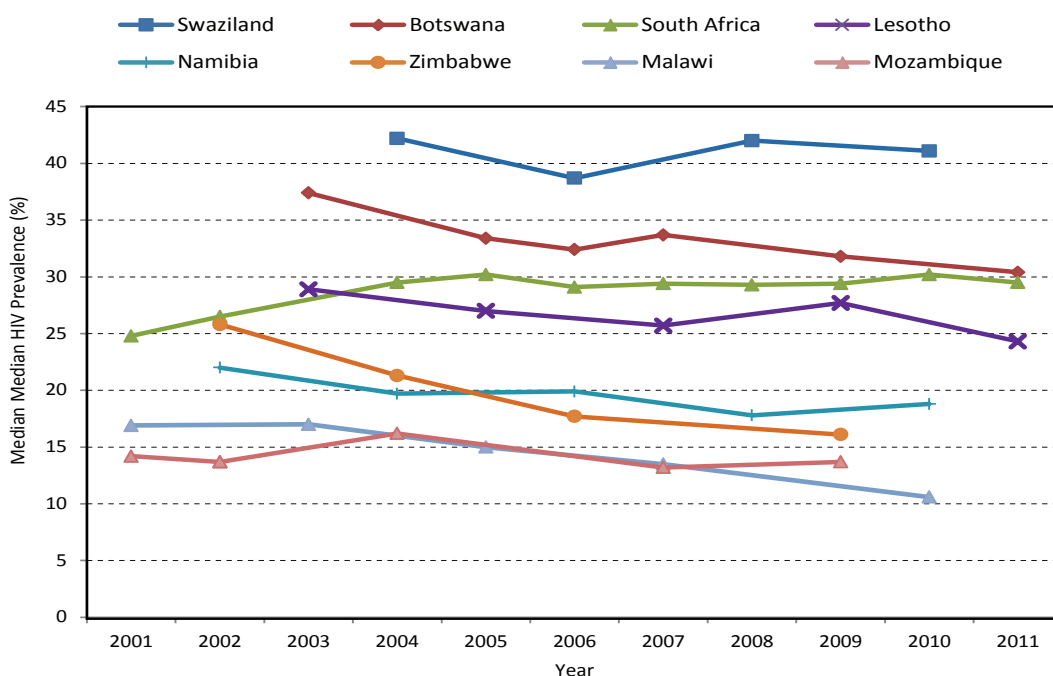
### Trends in HIV prevalence among pregnant women (ANC attendees) aged 15-49 years

More than 50% of the countries in the WHO African Region have registered declining HIV prevalence rates among ANC attendees (aged 15-49 years), and for many others, HIV prevalence is either stabilising or beginning to decline. However, HIV prevalence is slowly on the rise in Mauritius and Uganda. In Uganda, the rise is after a phase of declining HIV prevalence rates followed by a phase of stabilisation for some years. Overall, the median HIV prevalence

rate among ANC attendees aged 15-49 years declined from 9.5% in 1999-2000 to 3.4% in 2007-2008 and to 3.5% in 2010-2012 in the WHO African Region.

In southern Africa, HIV prevalence rates among ANC attendees have declined considerably in Botswana, Malawi, Zambia and Zimbabwe. Prevalence rates are stabilizing or even beginning to decline in Namibia and South Africa. In Lesotho, Swaziland, Mozambique and Madagascar prevalence rates are stabilising (Figure 2.1).

**Figure 2.1: Trends in median HIV prevalence (%) among ANC attendees aged 15-49 years in selected countries in southern Africa, WHO African Region, 2001-2012**

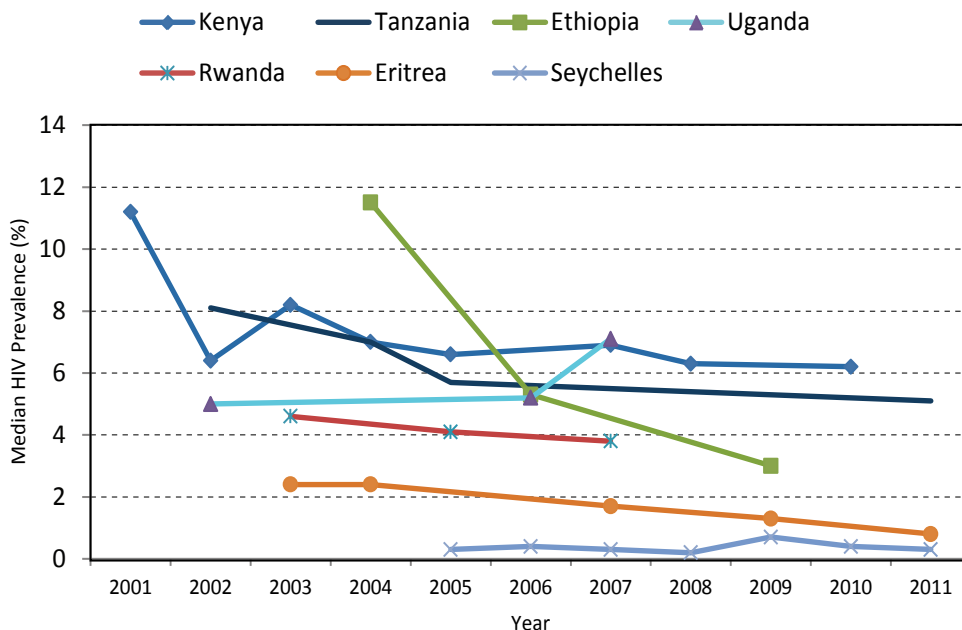


Sources: Country GARPR reports 2012 and ANC HIV surveillance reports in selected countries

In eastern Africa, HIV prevalence rates among ANC attendees have declined in Eritrea, Ethiopia, Kenya, Rwanda and the United Republic of Tanzania (Figure 2.2). However, in Uganda, HIV prevalence

rates dropped from 22% in 1991 to 5% in 2002 and gradually increased to 7.1% in 2007. HIV prevalence in Seychelles remained < 1% between 2005 and 2012.

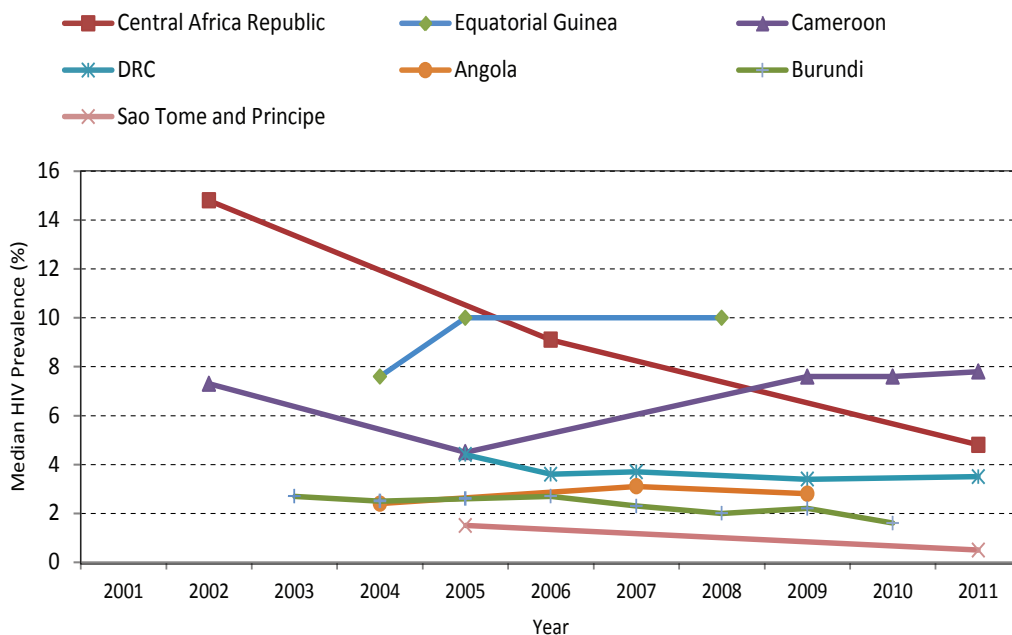
**Figure 2.2 Trends in median HIV prevalence (%) among ANC attendees aged 15-49 years in selected countries in eastern Africa, WHO African Region, 2001-2012**



Sources: Country GARPR reports 2012 and ANC HIV surveillance reports in selected countries

Figure 2.3 shows declining HIV prevalence has stabilised in Cameroon prevalence rates in the Central African Republic at around 7.6% between 2009 and 2012 and in the Democratic Republic of Congo at around 3.5% between 2006 and 2011. In the Central African Republic, HIV prevalence decreased from 9.1% in 2006/2007 to 4.8% in 2011. HIV prevalence rates in the Central African Republic, Burundi and Sao Tome and Principe. In the Central African Republic, Congo at around 3.5% between 2006 and 2011.

**Figure 2.3: Trends in median HIV prevalence (%) among ANC attendees aged 15-49 years in selected countries in central Africa, WHO African Region, 2001-2012**

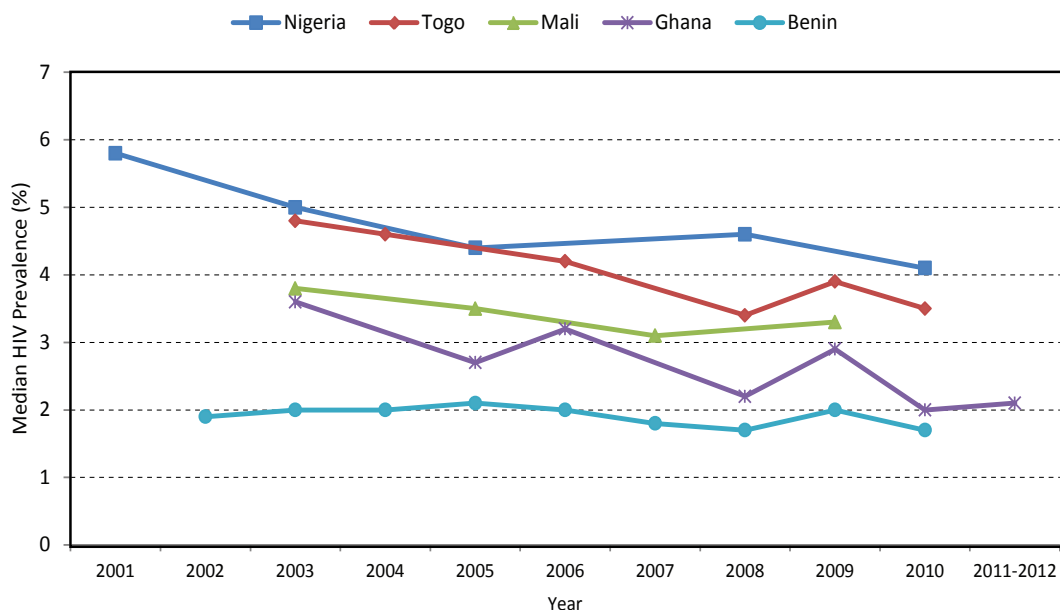


Sources: Country GARPR reports 2012 and ANC HIV surveillance reports in selected countries

In Western Africa, declining HIV In eastern Africa, HIV prevalence rates among ANC attendees have declined in Eritrea, Ethiopia, Kenya, Rwanda and the United Republic of Tanzania (Figure

2.2). However, in Uganda, HIV prevalence rates dropped from 22% in 1991 to 5% in 2002 and gradually increased to 7.1% in 2007. HIV prevalence in Seychelles remained < 1% between 2005 and 2012.

**Figure 2.4: Trends in median HIV prevalence (%) among ANC attendees aged 15-49 years in selected countries in western Africa, WHO African Region, 2001-2012**



Sources: Country GARPR reports 2012 and ANC HIV surveillance reports in selected countries

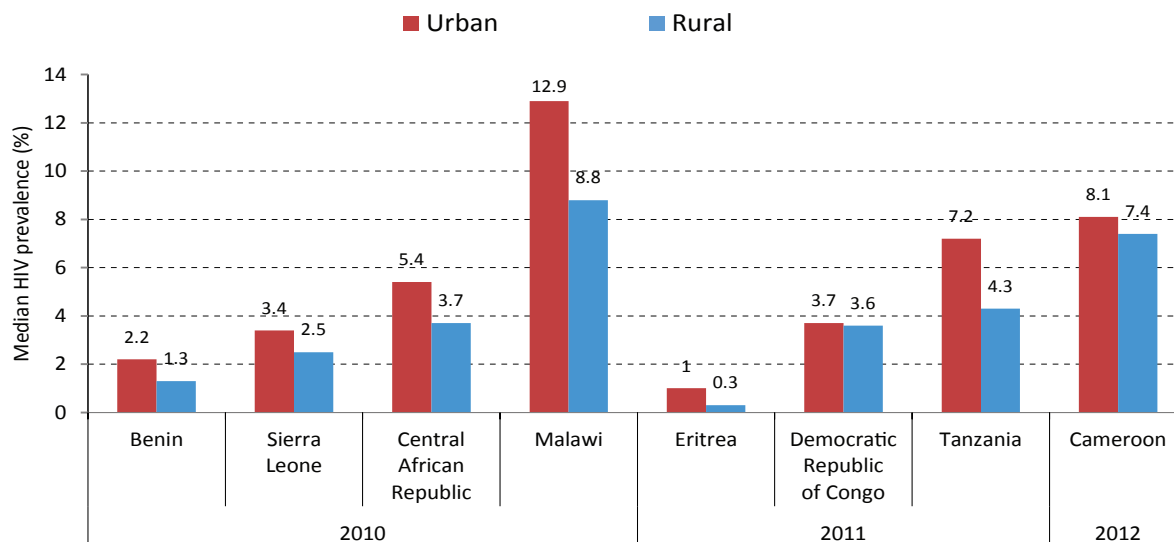
### Urban and rural HIV prevalence differences

HIV prevalence rates are generally higher in urban areas than in rural areas in the WHO African Region (Figure 2.5). In Mozambique HIV prevalence was 22.1% in urban areas and 9.5% in rural areas in 2009 and similarly in the Tanzania

mainland, prevalence rates were 7.2% and 4.3% in urban and rural areas respectively in 2011. On the other hand in Namibia and the Democratic Republic of Congo, HIV prevalence among ANC attendees in urban areas and rural areas were close.



**Figure 2.5: Median HIV prevalence (%) among ANC attendees aged 15-49 years in selected countries by area of residence, WHO African Region, most recent year**



Sources: Country GARPR reports 2012 and ANC HIV surveillance reports in selected countries

### 2.3.2 HIV prevalence among the adult population aged 15-49 years: data derived from population based surveys

This section presents HIV prevalence in the general population using data from population based surveys conducted in selected countries in the region in the period 2008-2012. The analysis of HIV prevalence trends utilized data from 2001 to 2012.

Data from recent population based surveys conducted in several countries in the region

that incorporated HIV testing continue to show that there are marked variations in HIV prevalence rates among the adult general population (men and women) in the subregions and between countries in the WHO African Region (Table 2.4). These data corroborate the diversity shown by the results from ANC sentinel surveillance. Between 2007 and 2012, HIV prevalence among the adult population aged 15-49 years ranged from 0.7% in Senegal (2010/2011) to 22.4% in Lesotho (2009).

**Table 2.4: HIV prevalence (%) among the general population (women and man) aged 15-49 years by sex in selected countries: data from population-based surveys, most recent year**

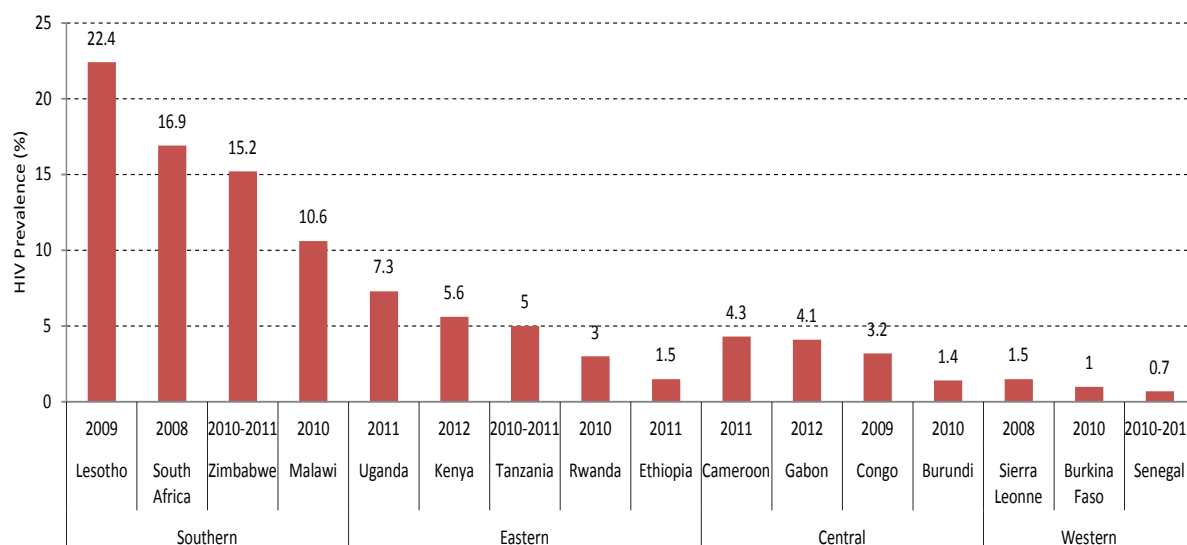
Subregion	Country	Year	All respondents (men & women)		Women		Men	
			N	HIV prevalence (%)	N	HIV prevalence (%)	N	HIV prevalence (%)
Southern Africa	Lesotho	2009	10,632	22.4	7,624	26.7	3,008	18
	Malawi	2010	13,588	10.6	7,091	12.9	6,497	8.1
	Mozambique	2009				13.1		9.2
	South Africa	2008	10,828	10.9	6,590	14.1	4,238	8.4
	Swaziland	2007-2008	...	...	....	31	...	20
	Zimbabwe	2010-2011	13,563	15.2	7,313	17.7	6,250	12.3
Eastern Africa	Ethiopia	2011	27,385	1.5	12,581	1.9	12,581	1
	Kenya	2012	13,720	5.6	7,233	6.9	6,487	4.4
	Rwanda	2010	12,607	3	6,917	3.7	5,690	2.2
	Tanzania	2011-2012	17,745	5	9,756	6	7,989	4
	Uganda	2011	19,556	7.3	10,883	8.3	8,673	6.1
Central Africa	Burundi	2010	8,087	1.4	4,533	1.7	3,554	1
	Cameroon	2011	13,503	4.3	7,221	5.6	6,282	2.9
	Congo	2009	12,110	3.2	6,438	4.1	5,671	2.1
	Gabon	2012	10,445	4.1	5,459	5.8	4,986	2.2
Western Africa	Burkina Faso	2010	14,607	1	8,293	1.2	6,314	0.8
	Senegal	2010-2011	9,430	0.7	5,326	0.8	4,104	0.5
	Sierra Leone	2008	6,174	1.5	3,448	1.7	2,726	1.2

Sources: MEASUREDHS HIV/AIDS indicator survey database, Country DHS/AIS reports, country GARPR reports 2012, WHO/AFRO database, South Africa national HIV prevalence incidence, behavioural communication survey, 2008

Figure 2.6 shows the variations in HIV prevalence among the general population aged 15-49 years between countries and subregions. Southern Africa and eastern Africa subregions are the worst affected. HIV prevalence rates among the general population aged 15-49 years in southern Africa ranged from 10.6% in Malawi (2010) to 22.4% in Lesotho (2009). In eastern

Africa, prevalence rates ranged from 1.5% in Ethiopia (2011) to 7.3% in Uganda (2011). In Central Africa HIV prevalence rates ranged from 1.4% in Burundi (2010) to 5.2% in Gabon (2012). Western Africa had the lowest HIV prevalence rates from < 1% in Senegal (2010-2011) to 1.5% in Sierra Leone (2008).

**Figure 2.6: HIV prevalence (%) among adult general population aged 15-49 years in selected countries by country and subregion, WHO African Region, most recent year**



Sources: MEASUREDHS HIV/AIDS indicator survey database, Country DHS/AIS reports, country GARPR reports 2012, South Africa national HIV prevalence incidence, behavioural communication survey, 2008

### Gender differences

Population based data continued to show that women were more likely to be HIV infected than men in almost all the countries with the exception of Niger where the prevalence rates among women and men were almost the same (Table 2.5). The differences

in HIV prevalence rates among women and men vary between countries. In Gabon (2012), women were about 2.5 times more likely to be infected than men while in Congo (2009), Cameroon (2011), Ethiopia (2011) and South Africa (2008) women were about 2 times more likely to be infected than men.

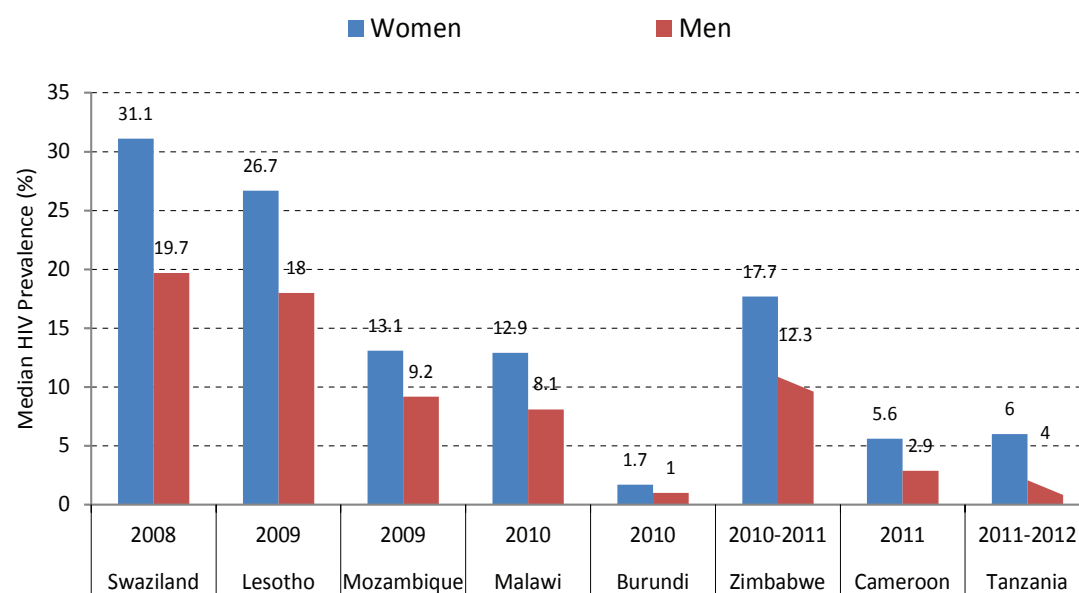
**Table 2.5: HIV prevalence (%) among general population (women and men) aged 15-49 years by sex in selected countries, WHO African Region, most recent year**

Subregion	Country	Year	HIV prevalence (%)	
			Women	Men
Southern Africa	Lesotho	2009	26.7	18
	Malawi	2010	12.9	8.1
	Mozambique	2009	13.1	9.2
	Swaziland	2007-2008	31.1	19.7
	Zambia	2007	16.1	12.3
	Zimbabwe	2010-2011	17.7	12.3
Eastern Africa	Ethiopia	2011	1.9	1
	Kenya	2012	6.9	4.4
	Rwanda	2010	3.7	2.2
	Tanzania	2011-2012	6	4

**Table 2.5: HIV prevalence (%) among general population (women and men) aged 15-49 years by sex in selected countries, WHO African Region, most recent year**

Subregion	Country	Year	HIV prevalence (%)	
			Women	Men
Central Africa	Burundi	2010	1.7	1
	Cameroon	2011	5.6	2.9
	Congo	2009	4.1	2.1
	Democratic Republic of Congo	2007	1.6	0.9
Western Africa	Benin	2006	1.2	0.8
	Cote d'Ivoire	2005	6.4	2.9
	Ghana	2003	2.7	1.5
	Guinea	2005	1.9	0.9
	Liberia	2007	1.9	1.2
	Mali	2006	1.5	1
	Niger	2006	0.7	0.8
	Senegal	2010-2011	0.8	0.5
	Sierra Leone	2008	1.7	1.2

Sources: WHO/AFRO HIV/AIDS database, measuredhs.com HIV/AIDS Indicators survey and DHS/AIDS country reports in selected countries

**Figure 2.7: HIV prevalence (%) among adult general population aged 15- 49 years by sex in selected countries in the WHO African Region, most recent year**

Sources: MEASUREDHS HIV/AIDS Indicators survey and DHS/AIDS country reports in selected countries

Figure 2.7 further illustrates the differences in HIV prevalence between women and men in the WHO African Region. In Lesotho (2009), HIV prevalence rates among women and men were 26.7% and 18% respectively while in Kenya (2012), the prevalence rates were 6.9% and 4.4% in women and men respectively.

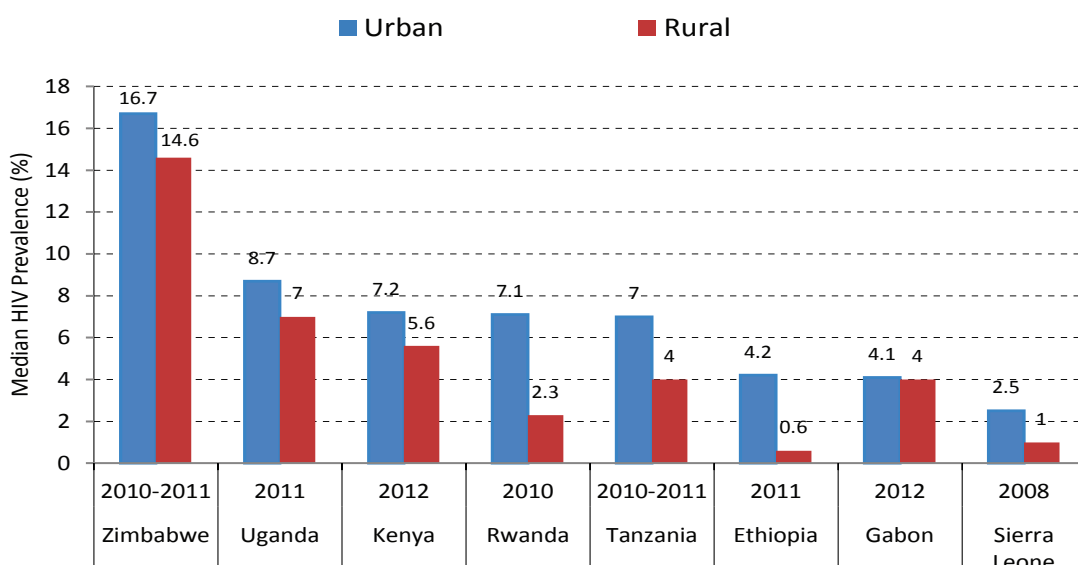
### The Urban-Rural Difference

On the whole, HIV prevalence rates are higher in urban than in rural areas (Figure 2.8). The differences between urban and rural areas vary between countries. For example, in 2011 in Ethiopia, the HIV prevalence rate in urban areas was about seven times more than that in rural areas (4.2% versus 0.6%) while in Gabon the urban

and rural HIV prevalence rates were close in 2012.

Secondary analyses of data from DHS conducted in 20 countries in sub-Saharan Africa between 2003 and 2008 showed that the urban poor were more likely to be HIV infected than their urban non-poor counterparts. However the reverse was true in the rural areas, the non-poor rural residents were more likely to be infected with HIV than the rural poor residents (11). For example, in Swaziland the non-poor urban residents had an HIV prevalence of 25.4% as compared to 36.5% among the poor urban residents in 2008. In Zambia the non-poor rural residents had an HIV of 11.8% versus 8.8% among the poor rural residents in 2007.

**Figure 2.8: HIV prevalence (%) among the general population (women and men) aged 15-49 years in selected countries by residence, WHO African Region, most recent year**



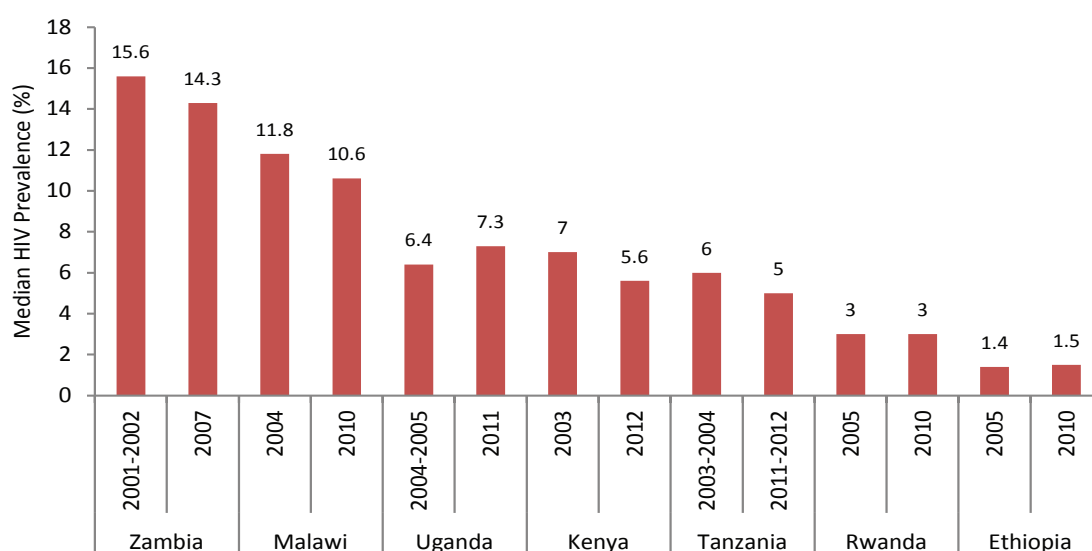
Sources: MEASUREDHS HIV/AIDS Indicators survey and DHS/AIDS country reports in selected countries

## Trends in HIV prevalence among the general population aged 15-49 years

In general, HIV prevalence rates among the general population aged 15-49 years are declining or stabilizing in countries that have had repeat population based surveys (Figure 2.9). In South Africa,

HIV prevalence rates among the general population aged 15-49 years remained almost stable between 2005 and 2008; 16.2 % and 16.9% respectively. In Uganda, there was an increase in the HIV prevalence rate from 6.4% in 2004/05 to 7.3% in 2011.

**Figure 2.9: Trends in HIV prevalence (%) among the adult general population (men and women) aged 15- 49 years in selected countries, WHO African Region, 2001-2012**



Sources: MEASUREDHS HIV/AIDS Indicators survey and DHS/AIDS country reports in selected countries

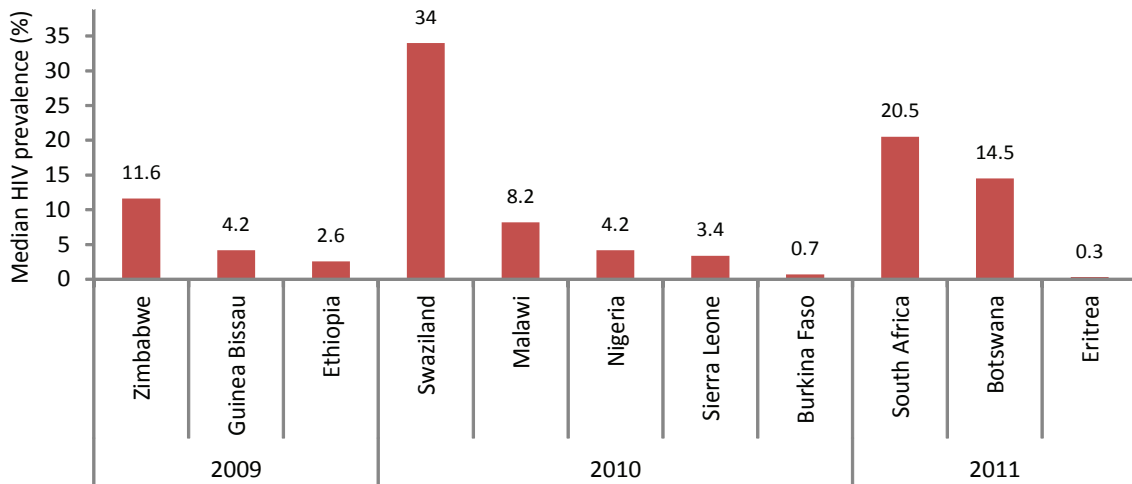
## 2.4 Young people aged 15-24 years

This section presents HIV prevalence trends among young people (ANC attendees and young people in the general population) aged 15-24 years. The section also presents trend analyses of comprehensive knowledge of HIV and sexual behaviours among young people.

### 2.4.1 HIV prevalence in young people aged 15-24 years among ANC attendees

There were variations in HIV prevalence among young ANC attendees aged 15-24 years between countries and subregions (Figure 2.10). HIV prevalence among ANC attendees aged 15-24 years ranged from 0.3% in Eritrea (2011) to 34% in Swaziland (2011). Southern African countries had the highest HIV prevalence rates.

**Figure 2.10: HIV prevalence (%) among ANC attendees aged 15-24 years in selected countries, WHO African Region, most recent year**



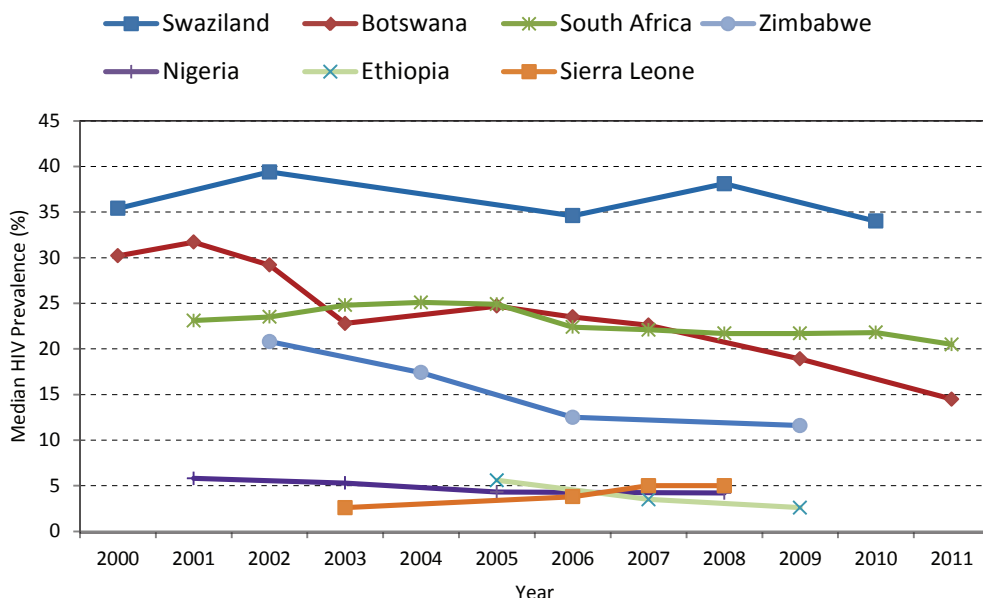
Source: GARPR country reports 2012 and country ANC HIV surveillance reports in selected countries

**Trends in HIV prevalence among ANC attendees aged 15-24 years**

The general trend is that HIV prevalence rates among young ANC attendees aged 15-24 years are declining (Figure 2.11). For example, in Botswana, HIV prevalence among ANC attendees aged 15-24 years declined by more than 50% from 30.2% in 2000 to 14.5% in 2011.

Similarly in Zimbabwe, HIV prevalence rates among young ANC attendees decreased from 20.8% in 2002 to 11.6% in 2009. In Nigeria, HIV prevalence among young ANC attendees decreased from 5.8% in 2001 to 4.2% in 2010.

**Figure 2.11: Trends in median HIV prevalence (%) among ANC attendees aged 15-24 years in selected countries, WHO African Region, 2000-2011**



Source: GARPR country reports 2012 and country ANC HIV surveillance reports in selected countries

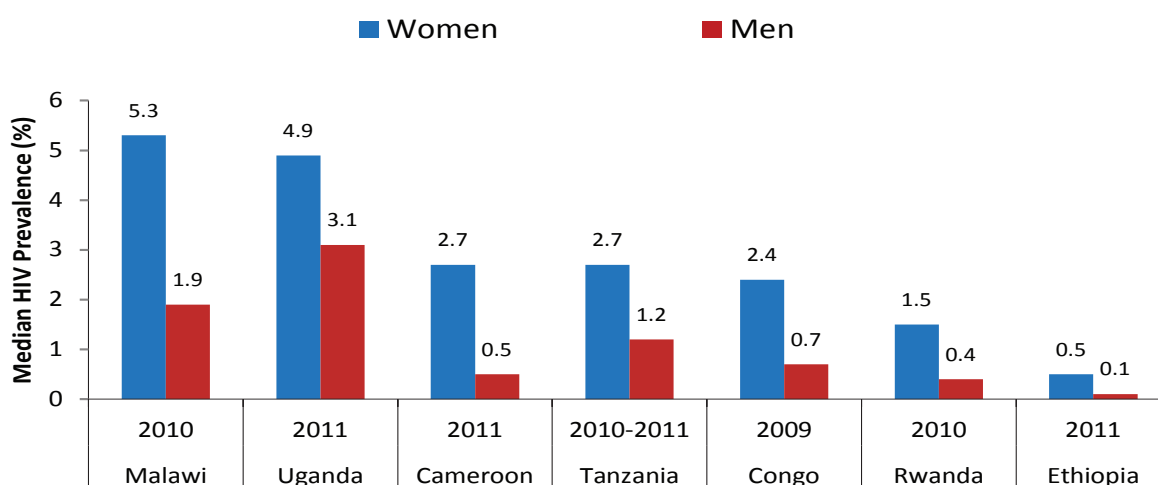
### HIV prevalence among young people (women and men) aged 15-24 years in the general population

There were wide variations in HIV prevalence among young people aged 15-24 years in the general population between the subregions and between countries (Figure 2.12). HIV prevalence among young people aged 15-24 years ranged from < 1% in Senegal and Ethiopia to 8.7% in South Africa. In general, countries in southern

Africa had the highest HIV prevalence rates among young people aged 15-24 years.

Population based HIV prevalence data continue to show that females aged 15-24 years were more likely to be infected with HIV than males of the same age (Figure 2.12). For example, in Ethiopia for every young man infected there were 5 young women infected (0.1% versus 0.5%).

**Figure 2.12: HIV prevalence (%) among men and women aged 15-24 years in the general population in selected countries by sex, WHO African Region, most recent year**



Sources: GARPR country reports 2012 and country DHS/AIS reports in selected countries

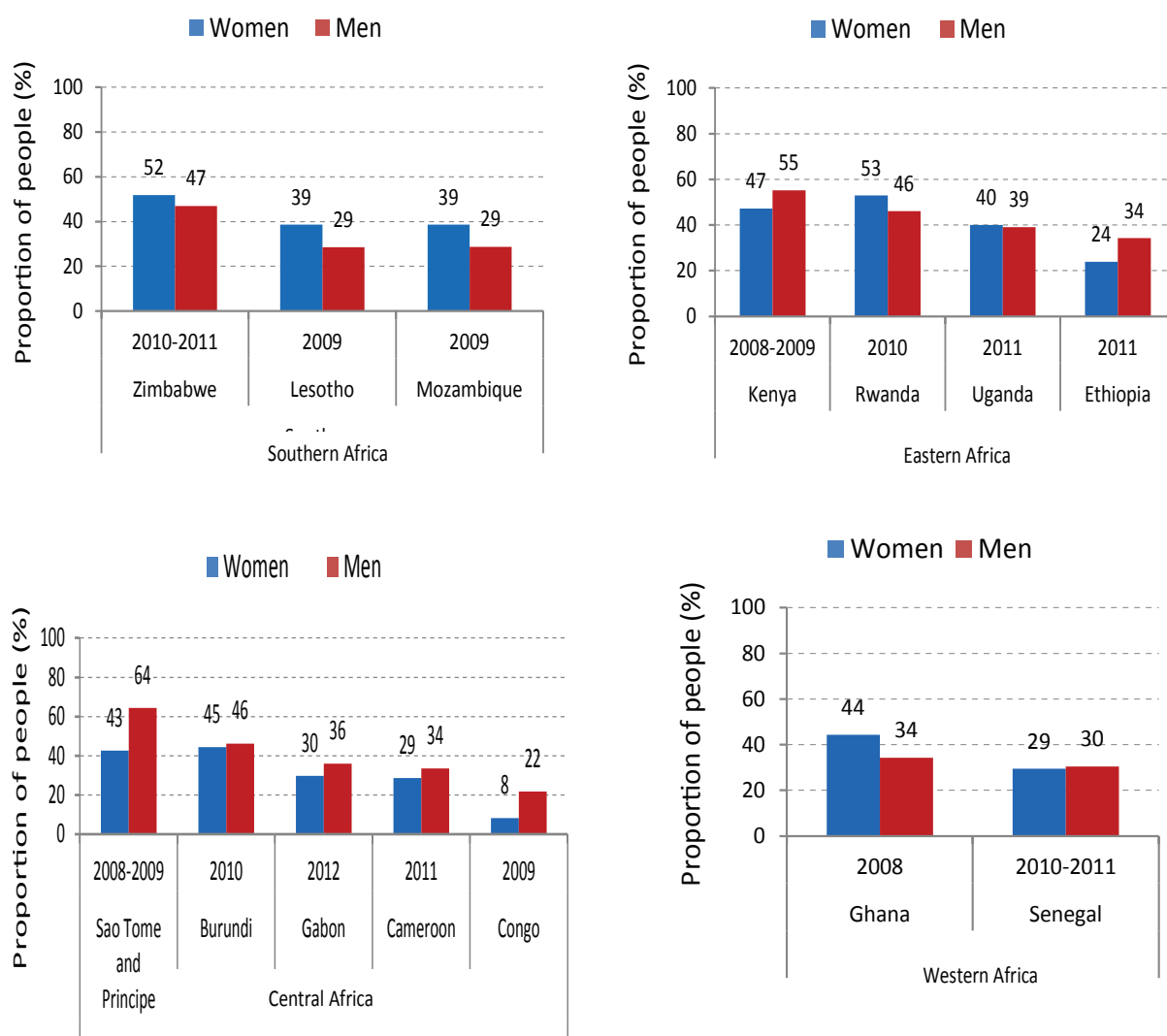
### 2.4.2 Comprehensive knowledge of HIV in young people

Comprehensive knowledge of HIV among young people is defined as the ability to 'identify two major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful uninfected partner and rejecting two

most common local misconceptions about HIV transmission and knowing that a health looking person can transmit HIV' (12). The data available from population based surveys indicate that in general the level of comprehensive knowledge of HIV among young people is relatively low (Figure 2.13).



**Figure 2.13: Proportion (%) of young people aged 15-24 years with comprehensive knowledge of HIV by sex in selected countries, WHO African Region, most recent year**



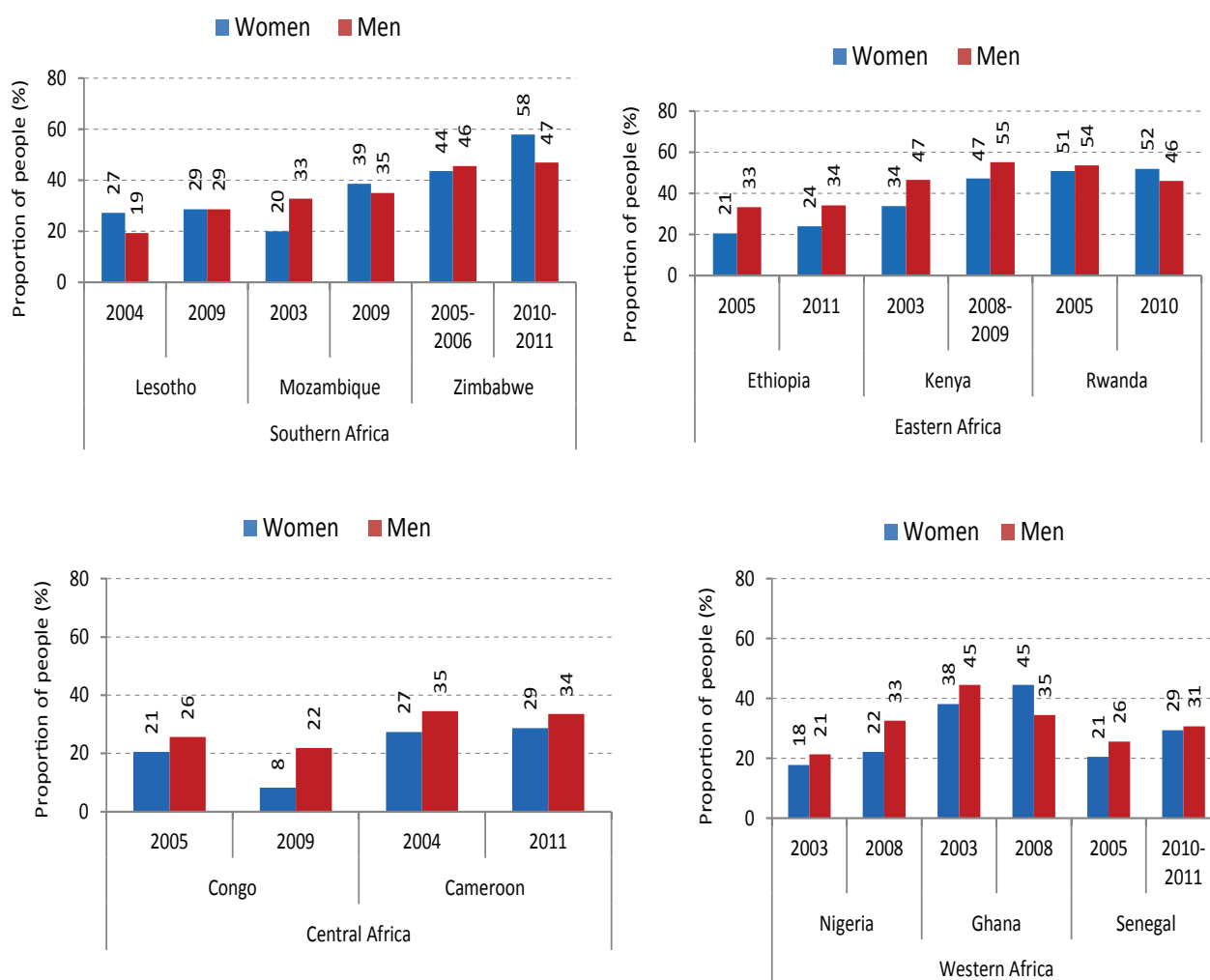
Sources: MEASUREDHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

### Trends in comprehensive knowledge of HIV

The data available from population based surveys show a modest improvement in the proportions of young people aged 15-24 years (both men and women) with comprehensive knowledge of HIV over

time, with the exception of Congo and Cameroon (Figure 2.14). In Ghana, there was a decline in the proportion of men with comprehensive knowledge of HIV between 2003 and 2008, while there was an increase in women.

**Figure 2.14: Trends (%) in comprehensive knowledge of HIV among young people aged 15-24 years in selected countries by sex, WHO African Region, 2003-2012**



Sources: MEASUREDHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

### 2.4.3 Sexual behaviours in young people

Young people aged 15-24 years are asked in behavioural surveys such as DHS and AIS about their sexual behaviours. Questions on having sex before the age of 15 years, ever having had premarital sex in the 12 months prior to the surveys, condom use during

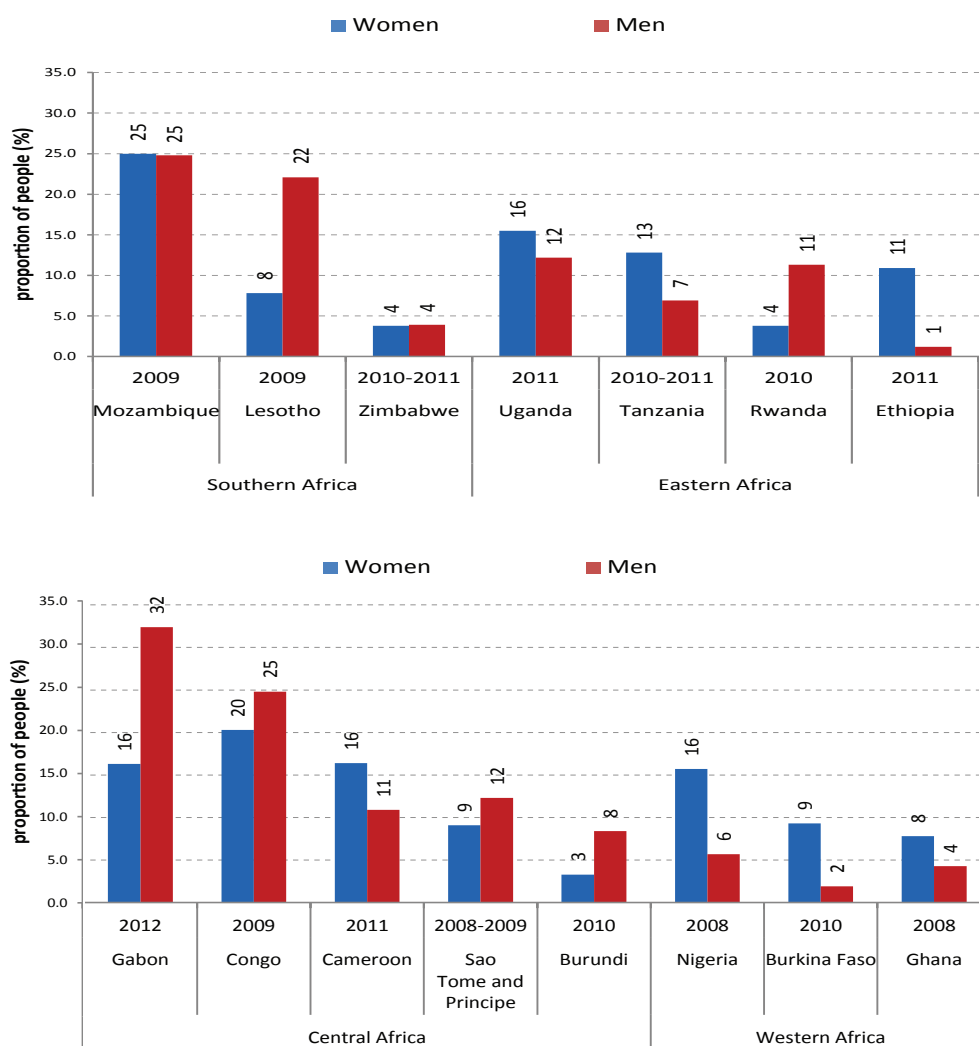
the last premarital sex, having sex with more than one partner (non-cohabiting and non-married partners; multiple sexual relationships) in the 12 months prior to the surveys and condom use at the last higher risk sex (with non-marital, non-cohabiting) among those reporting having one or more sexual partners in the last 12 months are asked.

## Sexual debut

Data from DHS/AIS surveys in the region indicate sexual debut before the age of 15 years was common (Figure 2.15). Whereas women in Ethiopia, Uganda, the United Republic of Tanzania, Cameroon, Ghana and Nigeria were more likely to report

being sexually active before the age of 15 years than men, the reverse was true in Congo, Lesotho, Rwanda, Gabon, Burundi and Sao Tome and Principe. In Zimbabwe and Mozambique, the proportions of women and men engaging in sex before age 15 years were very close.

**Figure 2.15: Proportion (%) of young people aged 15-24 years reporting having sex before age 15 years in selected countries, WHO African Region, most recent year**



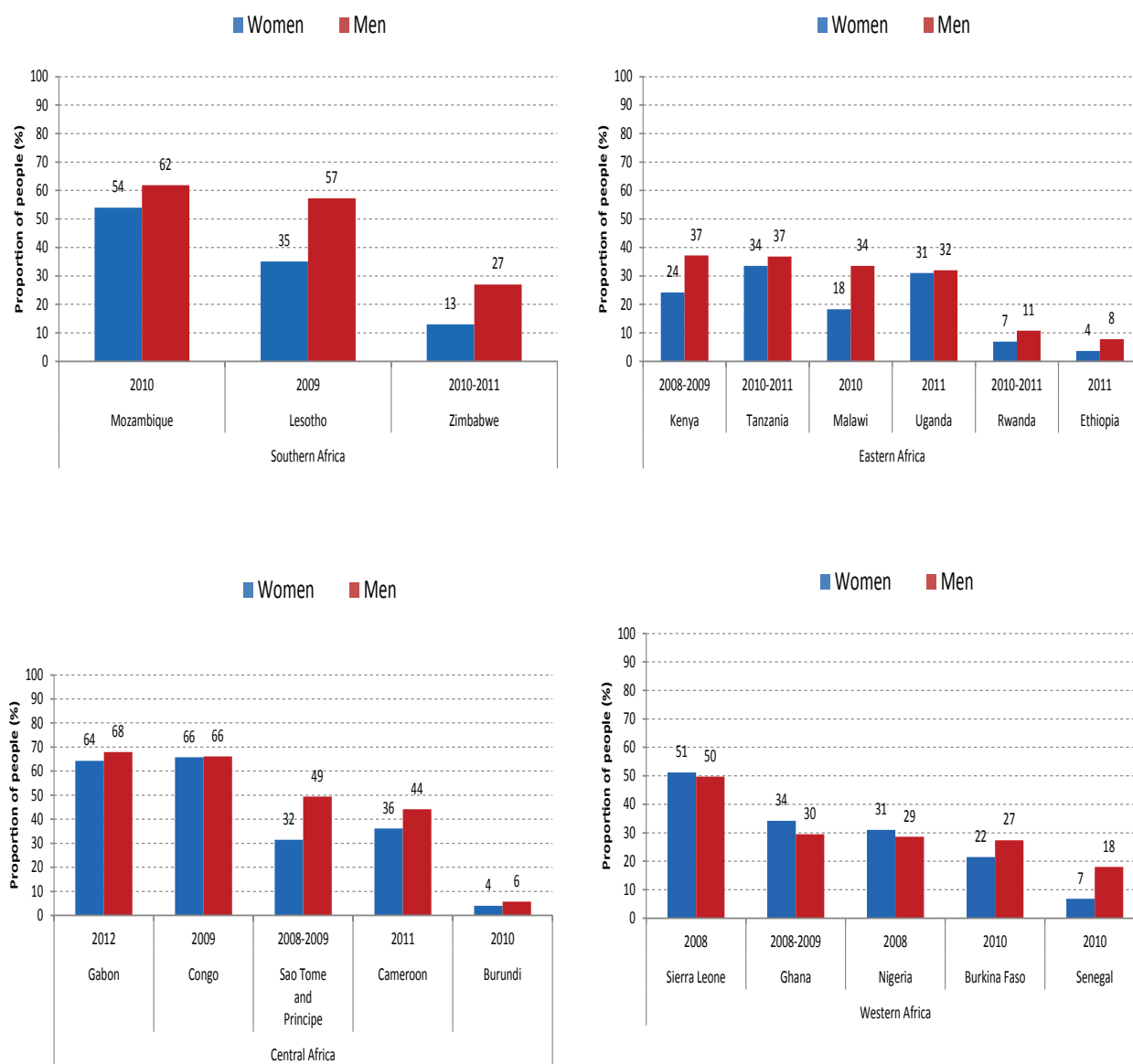
Sources: MEASUREDHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

## Premarital sex

Premarital sex was common among young people aged 15-24 years (Figure 2.16). About 31% and 34% of the young women and men aged 15-24 years respectively

reported having had premarital sex in the 12 months preceding the surveys. On the whole, young men were more likely to report engaging in premarital sex than women.

**Figure 2.16: Proportion (%) of young people (aged 15-24 years) who reported having had premarital sex in the 12 months preceding the surveys by sex in selected countries, WHO African Region, most recent year**

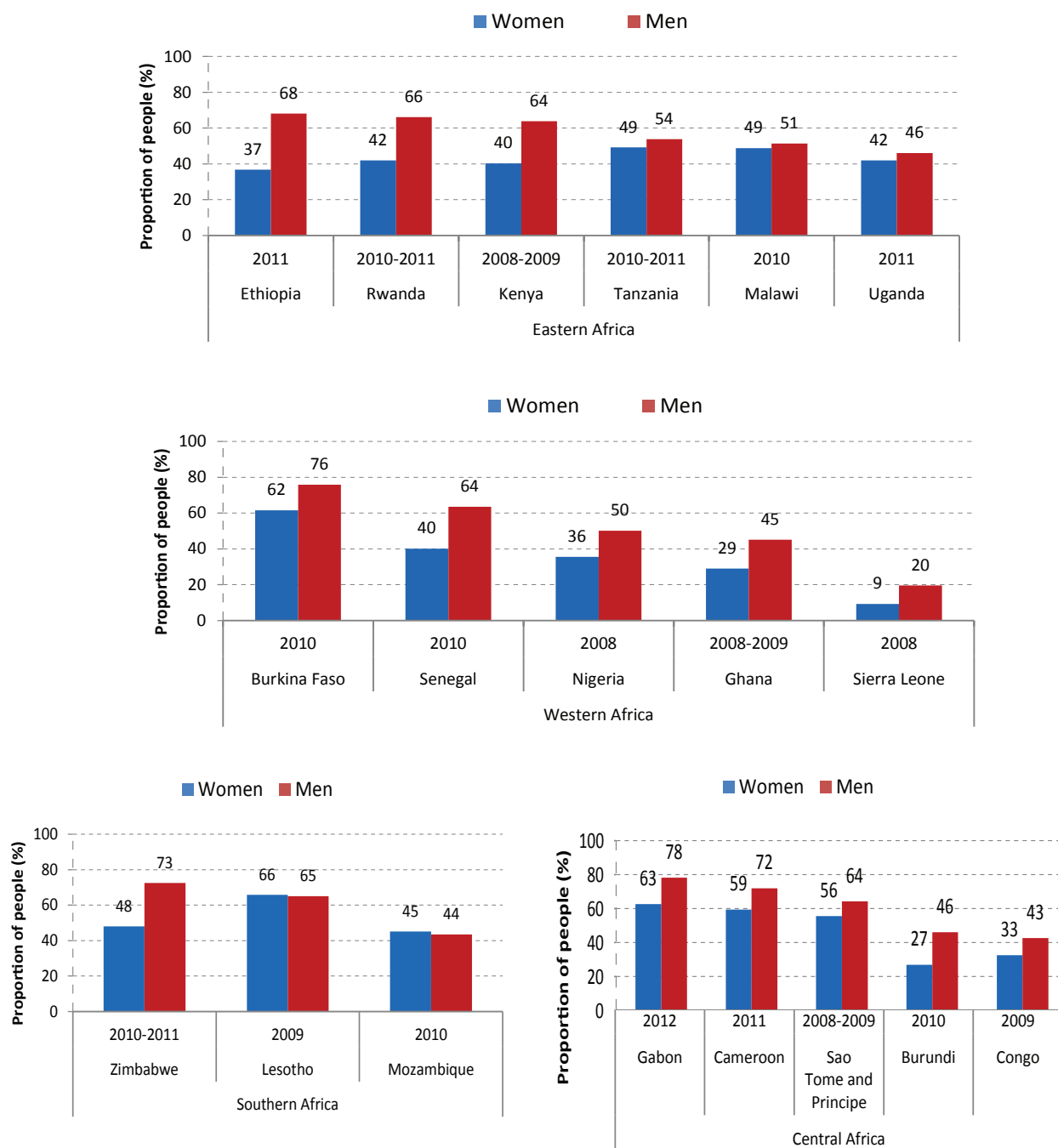


Sources: MEASURE DHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

Of the young people aged 15-24 years who reported having had premarital sex in the last 12 months, 42% of the women and 63.6% of the men used a condom at the last premarital sex (Figure 2.17). Men were more likely to use a condom at last premarital sex than women. The data from

countries that have had repeat population based surveys indicated increasing trends in condom use at last premarital sex for both men and women aged 15-24 years, but the increases were more marked among young men than young women.

**Figure 2.17: Proportion (%) of young people aged 15-24 years who reported having premarital sex in the last 12 months and used a condom at the last premarital sex in selected countries, WHO African Region, most recent year**



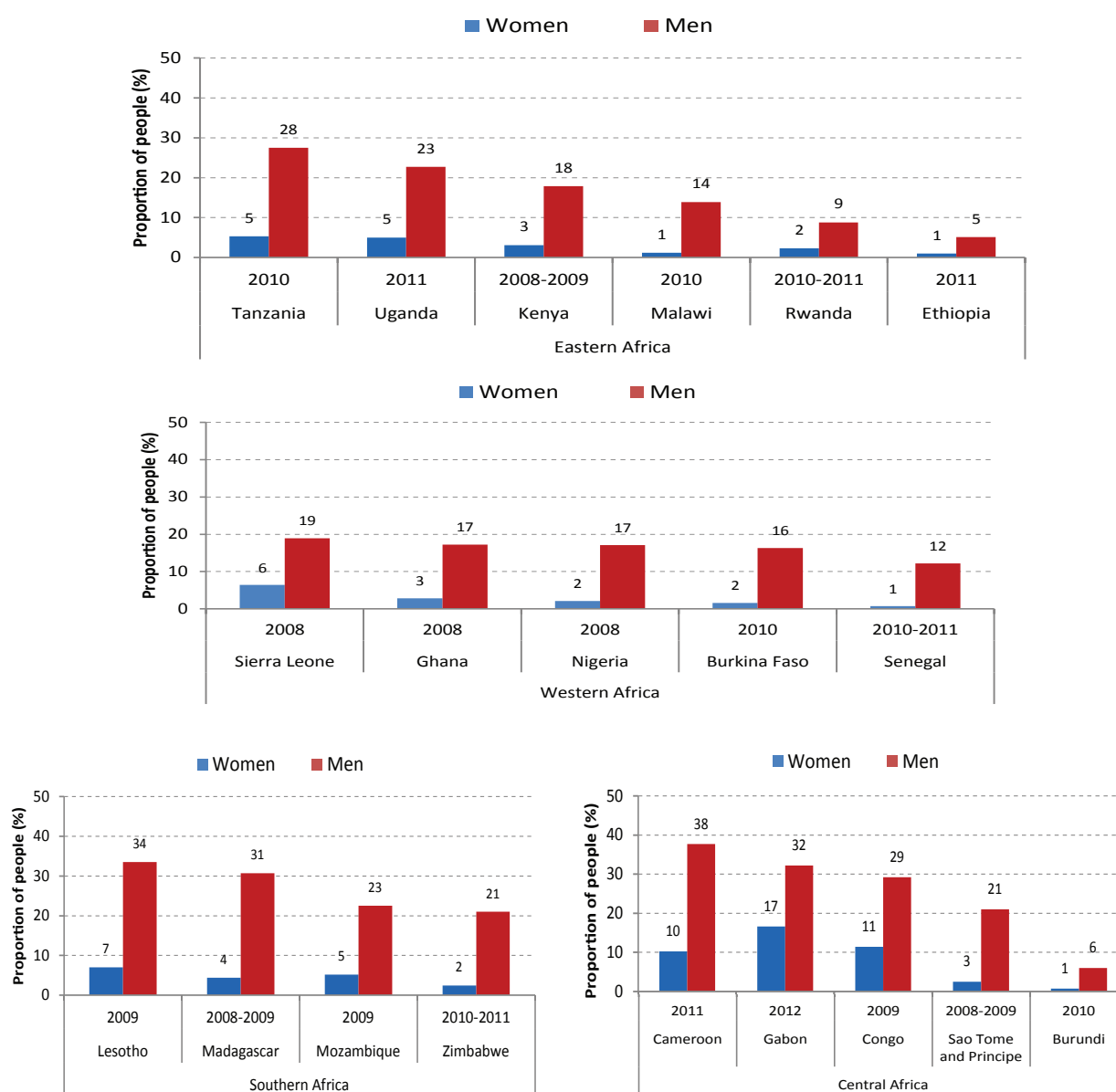
Sources: MEASURE DHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

### Multiple sexual relationships

Figure 2.18 shows that having multiple sexual partners in the last 12 months

was common among young people, both women and men. Men were more likely to report engaging in multiple sexual relationships than women (Figure 2.18).

**Figure 2.18: Proportion (%) of young people aged 15-24 years who reported having sex with multiple partners in the last 12 months by sex in the WHO African Region, most recent year**



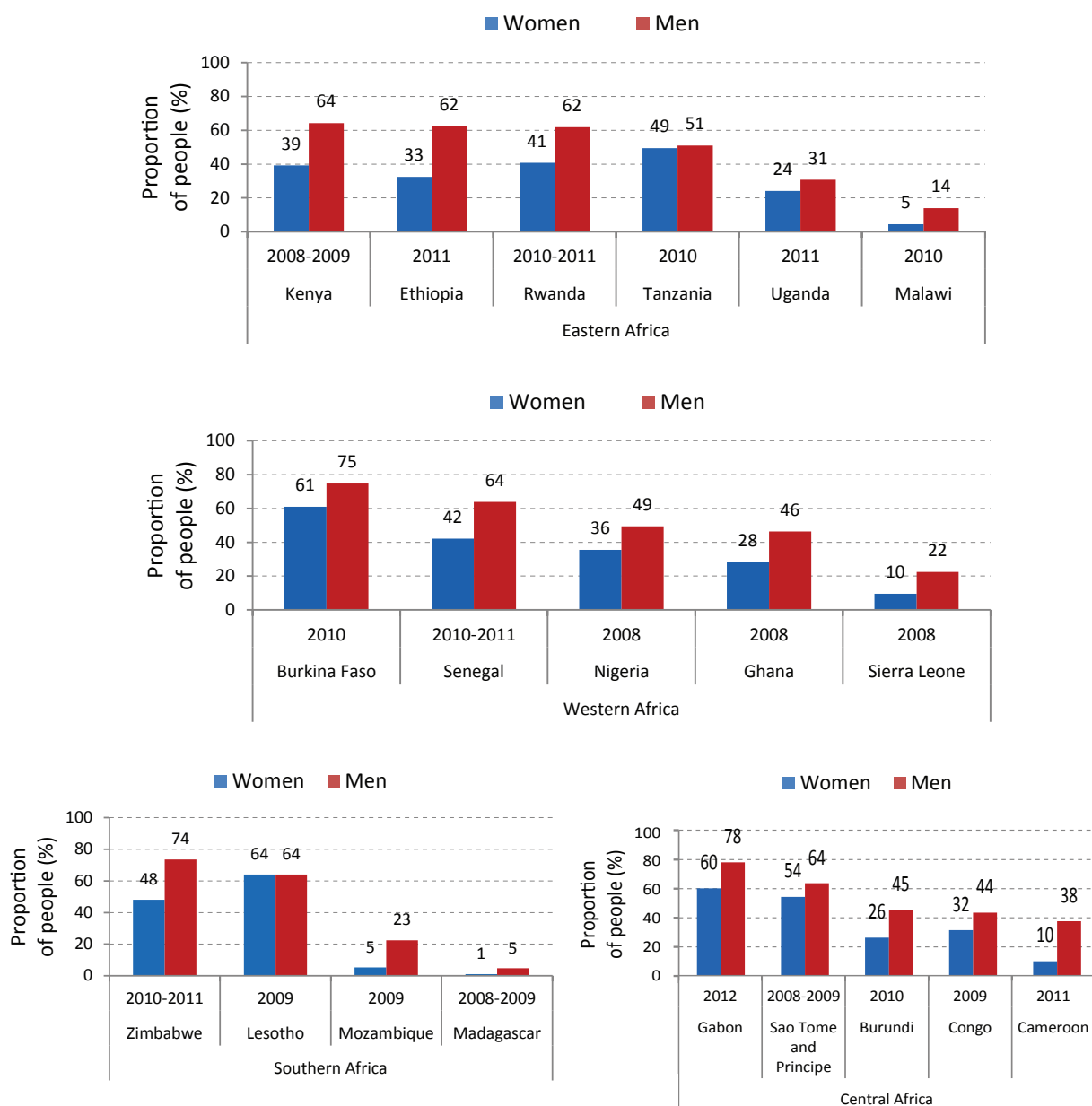
Sources: MEASURE DHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

### Condom use at the last higher risk sex

Young people aged 15-24 years who reported having sex with more than one sexual partner in the last 12 months were asked about the use of condom at the last sex with a non-married non-cohabiting partner (higher risk sex). In general, condoms were not always used

during higher risk sex (Figure 2.19). Of the young people who reported having multiple sexual partners in the last 12 months in 20 countries, only 32.5% (range 1.1% - 61%) of the women and 50.2% (range 4.8% - 78.1%) of the men used a condom at the last higher risk sex. Men were more likely to report using condoms than women at last higher risk sex.

**Figure 2.19: Proportion (%) of young people aged 15-24 years who reported having sex with multiple sexual partners in the last 12 months and used a condom at the last higher risk sex, most recent year**



Sources: MEASURE DHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

### Trends in reported multiple sexual relationships

Overall there were decreasing trends in the proportion of young people who reported having multiple sexual partners in the last 12 months (Table 2.6). However, notable increases in the proportions of

young people, both men and women, reporting having more than one sexual partner in the last 12 months were observed in Ethiopia, Rwanda, Tanzania and Zimbabwe. In Uganda, the increase was among women only.

**Table 2.6: Trends in the proportion (%) of young people aged 15-24 years reporting having more than one sexual partner in the past 12 months and condom use at last higher risk sex in selected countries, WHO African Region, 2002-2012**

Subregion	Country	Year	Higher risk sex in the past 12 months		Condom use at last higher risk sex	
			Women	Men	Women	Men
Southern Africa	Lesotho	2004	8.8	35.5	50.1	47.9
		2009	7	33.5	64	64
	Madagascar	2003-2004	5.3	4.4	1.1	1.1
		2008-2009	29.6	30.7	5.5	4.8
	Mozambique	2003	8.1	39.1	29.1	33.2
		2009	5.2	22.5	40.1	39.8
	Zimbabwe	2005-2006	1.8	19.8	42.4	48
2010-2011		19.8	21	48	73.6	
Eastern Africa	Ethiopia	2002	2.6	18.6	17.1	30.5
		2005	0.5	4.8	28.4	49.4
		2011	1	5.1	32.5	62.4
	Kenya	2003	3.1	24.2	25.4	46.8
		2008-2009	3.1	17.9	39.2	64.3
	Malawi	2002	1.5	19.5	3.9	16.2
		2004	1.7	13.2	3.3	15.5
		2010	1.2	13.9	4.5	16.8
	Rwanda	2000	1.1	6	22.5	55.1
		2005	1	4.4	26.4	39.4
		2010-2011	2.3	8.8	40.7	61.8
	Tanzania	2004	7.5	32.7	41.7	47.1
		2005	5	33.2	38.6	45.5
		2008	4.1	22	46.3	49
		2010	5.3	27.5	49.4	51
Uganda	2004-2005	5.1	28.3	52.9	55.1	
	2006	3	22.7	38.3	54.5	
	2011	5	22.7	24.2	30.7	
Central Africa	Cameroon	2004	10.4	41.4	46.5	57.4
		2011	10.2	37.4	59.9	71.8
Western Africa	Burkina Faso	2003	2.7	23.2	53.9	69.9
		2010	1.6	16.3	61	74.7
	Ghana	2003	3.6	17.8	32.7	51.7
		2008	2.8	17.2	28.2	46.4
	Nigeria	2003	3.6	24.7	24.4	46.3
		2008	2.1	17.1	35.5	49.4
	Senegal	2005	1.9	21	35.6	52.4
2010-2011		0.7	12.2	42.1	63.8	

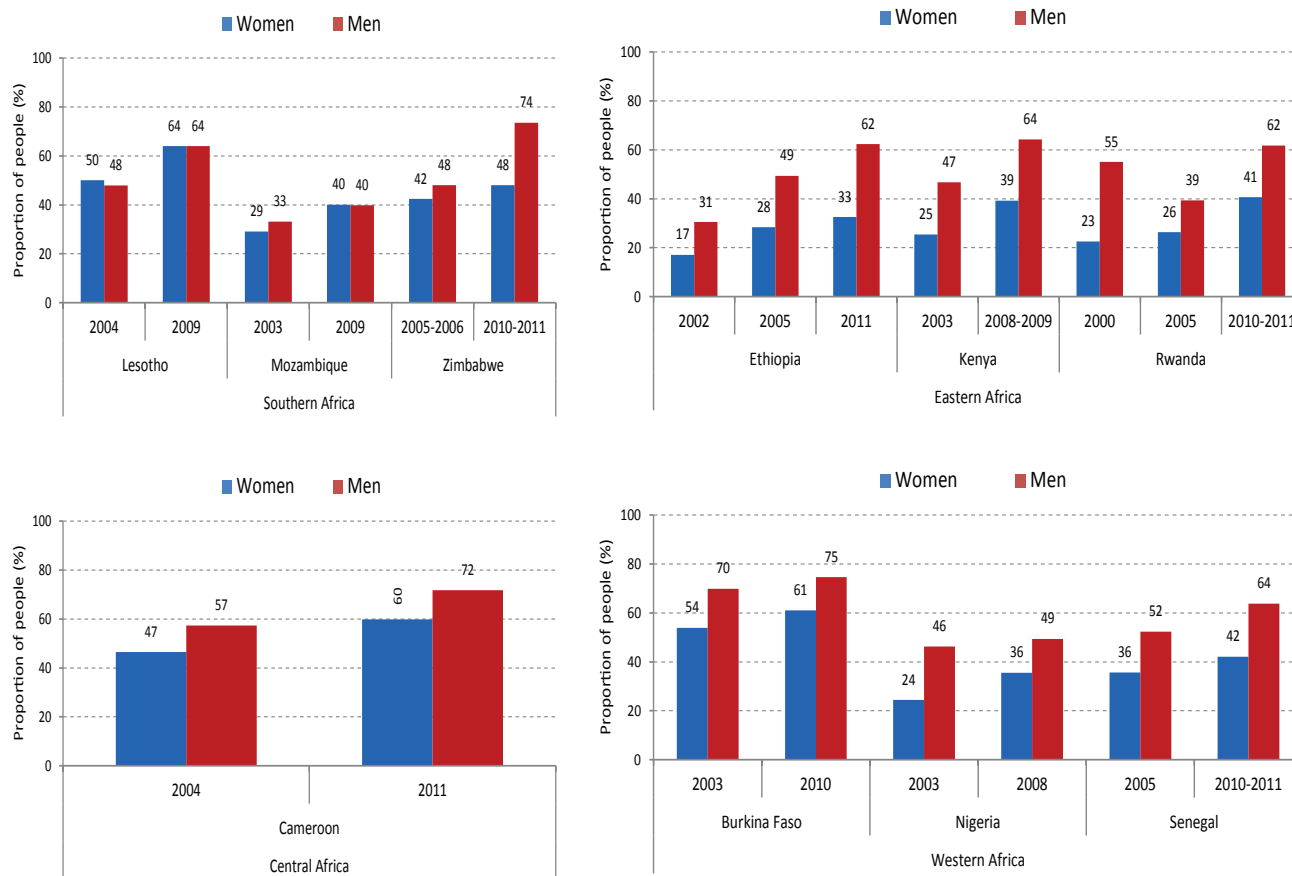
Sources: MEASUREDHS HIV/AIDS Indicators survey database and selected country DHS/AIS reports

There was also an overall increase in condom use for both men and women aged 15-24 years at last higher risk sex in the Region (Table 2.20). However in

Malawi, Nigeria and the United Republic of Tanzania condom use remained almost the same while it decreased in Uganda and Ghana.



**Figure 2.20: Trends (%) of young people aged 15-24 years reporting having multiple sexual partners in the last 12 months and using a condom at last higher risk sex in selected countries, WHO African Region, 2008-2012**



Sources: MEASURE DHS HIV/AIDS Indicators survey database and country DHS/AIS reports in selected countries

## 2.5 HIV prevalence among key populations

HIV prevalence among key populations is much higher than in the general population in the region

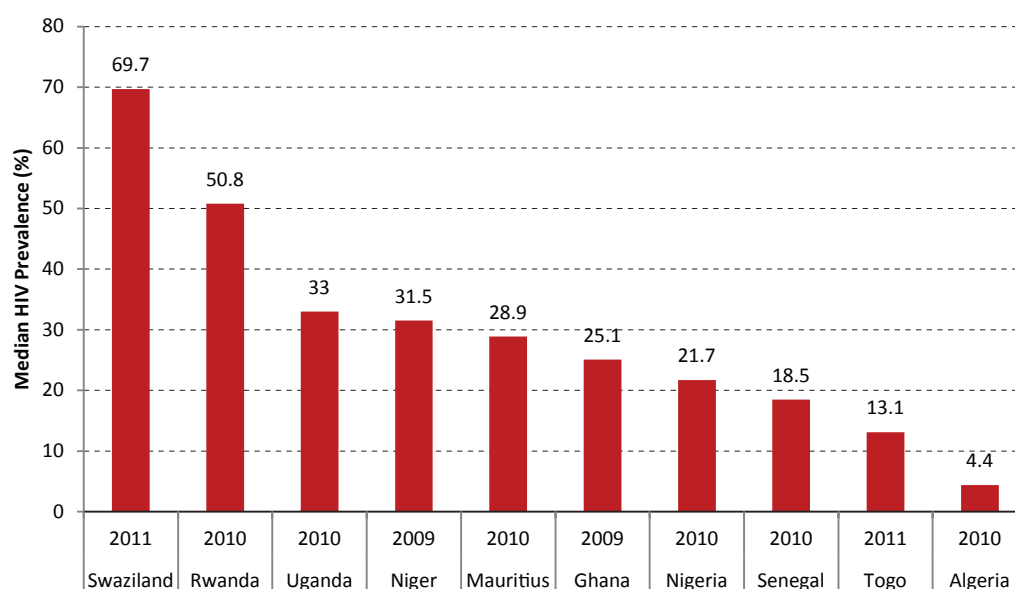
### Sex workers

Among female sex workers HIV prevalence ranged from <1% in Madagascar to 69.7% in Swaziland (Figure 2.21). HIV prevalence among sex workers increased from 1.7% in 2000 to 4.4% in 2010 in Tamanrasset, in Algeria (13). In Senegal, sex workers had an HIV prevalence of 18.5% in 2010, a slight decrease from 19.6% in 2006 (14). In Madagascar, 0.29% of the sex workers were HIV

infected in 2010. In Sao Tome and Principe, HIV prevalence rate among sex workers was 2.8% in 2009, a decrease from 4.2% in 2008 (15). In Niger, HIV prevalence rate among sex workers was 31.5% (varied from 16.7% in Tillaberi to 60.6% in Maradi in 2009 (16). In Ghana, sex workers had an HIV infection rate of 25.1% in 2009, a decline from 34% in 2006 (17).

Studies in sex workers have mainly been conducted among female sex workers. Nevertheless, a cross sectional study conducted in male sex workers in Abidjan in Cote d'Ivoire found male sex workers with an HIV prevalence of 50% in 2007-2008. (18)

**Figure 2.21: HIV prevalence (%) among sex workers in selected countries, WHO African Region, most recent year**



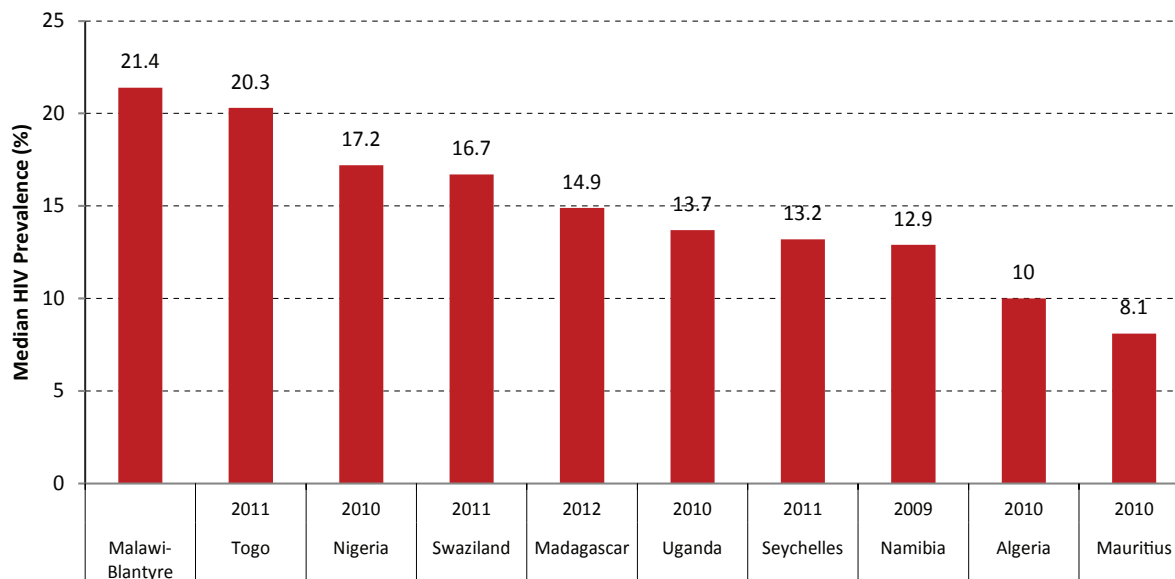
Source: Country GARPR 2012 reports

### Men who have sex with men (MSM)

MSM are highly stigmatized in most countries in the region, and in most of the countries sex between men is a criminal offence. Harsh punishments are imposed on those found engaging in the practice. In Kenya, the conviction of sex between men is 14 years in prison (19). As a result, the response to HIV/AIDS, including surveillance of HIV prevalence among MSM is poor in most countries in the region; though a recent review showed that there were no major differences in the conduct of surveys among MSM in countries that decriminalise MSM and those that do not (8).

HIV prevalence among MSM in 11 countries ranged from 10% in Algeria (2010) to 21.8% in Senegal (2007). Studies conducted in Namibia in 2009 indicated an HIV prevalence of 12.9% among MSM and in Blantyre, Malawi in 2007, found MSM with an HIV prevalence of 21.4% (20). In Swaziland a BSS found an HIV prevalence of 16.7% among MSM in 2011, and among MSM aged 30-44 years the rate was more than 50% in 2011 (21). In Seychelles, a Biological and Behavioural Survey conducted in 2011 found MSM with an HIV prevalence of 13.2% and of these 41.9% were also infected with hepatitis C (22).

**Figure 2.22: HIV prevalence (%) among Men who has Sex with Men (MSM) in selected countries, WHO African Region, most recent year**



*Source: Country GARPR 2012 reports*

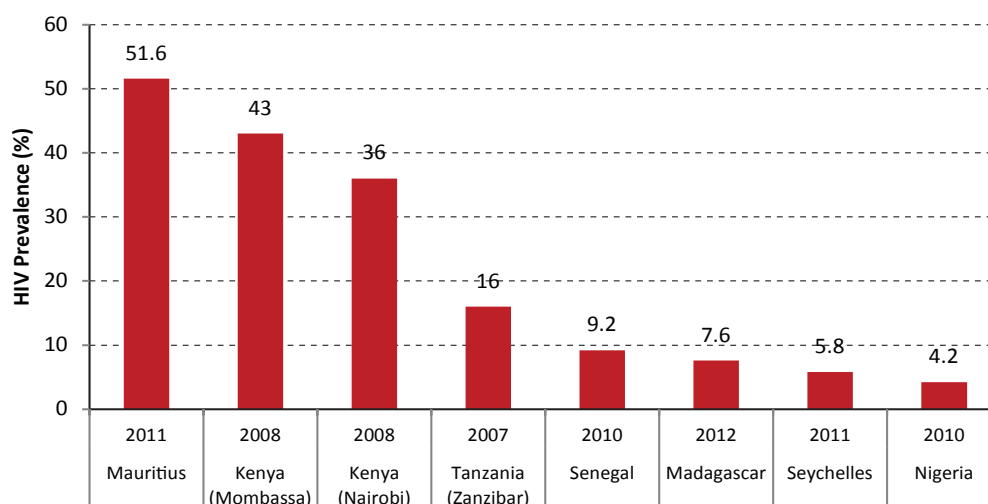
### People Who Inject Drugs (PWID)

Few countries in the WHO African Region have HIV prevalence data among people who inject drugs (PWID). Criminalisation of the practice in most countries in the region limits access to PWID. A review of the 2012 country GARPR reports and selected recent National Strategic Plans on HIV/AIDS indicate that countries in the region are acknowledging that injecting drug use is an emerging but growing phenomenon.

In the 8 countries that reported HIV prevalence among PWID, HIV prevalence ranged from 4.2% in Nigeria to 51.6% in Mauritius. In Mauritius, HIV prevalence rose from 47.4% in 2009 to 51.6% in

in 2011 (23). In 2008, HIV prevalence among PWID in Mombasa, Kenya was 43%, and in Nairobi the capital city of Kenya, HIV prevalence among PWID was 36% (24). In 2010 in Dar es Salaam, Tanzania, 55% of women PWID were HIV infected as compared to a rate of 12% among men PWID. In Zanzibar, a BSS conducted in 2007 found an HIV prevalence of 16% among PWID, as compared to a rate of <1% among the general population. Women PWID in Zanzibar were found to have an HIV infection rate of 74% as compared to 14% among men (24). In Seychelles, 5.8% of the PWID were HIV infected and of these 53.5% had hepatitis C in 2011 (22).

**Figure 2.23: HIV prevalence (%) in People Who Inject Drugs (PWID) in selected countries, WHO African Region, most recent year**



Source: GARPR 2012 reports

## Other Key Populations

Countries in the WHO African Region have identified other groups such as migrants, prisoners, truck drivers, fisher men, cross border traders and miners as populations that need to be targeted with HIV interventions. In 2010, surveyed migrants in Algeria had an HIV prevalence of 0.82%. Algeria also found an HIV prevalence of 1.74% among STI patients in the same period (13). HIV prevalence among truck drivers in Senegal decreased from 1.4% in 2006 to 0.6% in 2010 (14). On the other hand HIV prevalence increased among fishermen from 0.2% in 2006 to 0.8% in 2010 in Senegal (14). In Uganda, HIV prevalence among a fishing community around Lake Victoria was 22%, and plantation workers had a rate of 7% in 2010 (25). Migrant workers in Swaziland had an HIV infection rate of 30.4% and among prisoners, the prevalence was 34.9% in 2011 (21).

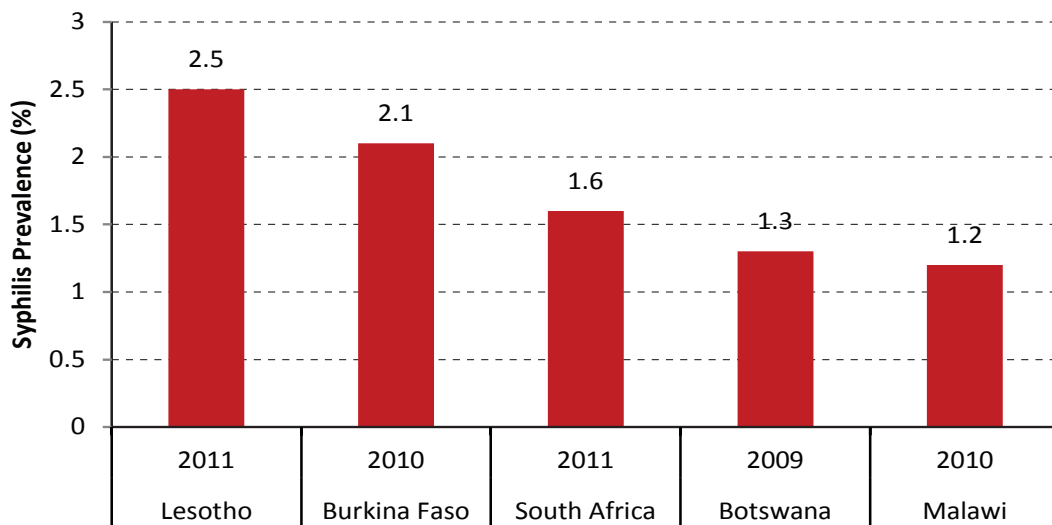
## 2.6 Sexually Transmitted Infections (STIs)

Data on STIs are limited in the WHO African Region. In South Africa, syphilis prevalence among ANC attendees was 1.6% in 2011, almost the same as 1.5% in 2010 (26). Syphilis prevalence in Lesotho among ANC attendees was 2.5% in 2011 (27). In Malawi, syphilis prevalence among ANC attendees decreased from 7% in 1996 to 1.2% in 2010 (20). In 2010, ANC attendees in Burkina Faso had a syphilis prevalence of 1.9% (28). In Botswana prevalence rates of syphilis have consistently remained low; syphilis prevalence among ANC attendees was 1.3% in 2011 (29). The low median national prevalence of syphilis among ANC attendees in most countries may mask 'the hotspots' in the country. For example in Lesotho, syphilis prevalence among ANC attendees varied from 0.7% in Quthing to 7.9% in Leribe in 2011. In Botswana HIV prevalence rates varied from 0% in Gantsi and Boteti districts

to 5.8% in Kgalaga South in 2011. In South Africa, the prevalence rates varied from 0.4% in KwaZulu Natal to 4.1% in Mpumalaga in 2011 (26). The 2011 AIS in Uganda found that 3% of Ugandans had a positive syphilis serology (30). In 2007, the Kenya AIS showed a syphilis prevalence rate of 2% in adults aged 15-64 years. Higher syphilis prevalence rates were found among older adults aged 50-64 years; 4.4% in men and 2.5% in women. The same survey found relatively high prevalence rates of herpes simplex type II (HSV); 41.6% among women and 26.3% (31).

The low prevalence rates of syphilis in the countries in the region are more likely an indication of good management of STIs. However, prevalence rates of syphilis can be affected by differences in testing strategies, health seeking behaviours, and self-medication practices, all of which have to be taken into account while interpreting the data. There appears to be an inconsistent relationship between the prevalence of syphilis and the prevalence of HIV in the WHO African Region.

**Figure 2.24: Prevalence (%) of syphilis among ANC attendees in selected countries, WHO African Region, most recent year**



*Source: Country GARPR reports and ANC HIV surveillance reports in selected countries*

## 2.7 Challenges and the way forward

Current data on HIV prevalence and trends in the WHO African Region show that countries in the region are on track “to have halted by 2015 and begin to

reverse the spread of HIV/AIDS”. HIV prevalence rates are on the decline or stabilizing in several countries. However, on the whole, HIV prevalence rates remain unacceptably high, especially in southern and eastern Africa.

Many countries in the region have made progress in strengthening HIV surveillance systems. The conduct of national population based surveys with an HIV testing component has expanded and the surveys are providing valuable information on sexual behaviours and HIV infection levels that are complementing data from HIV sentinel surveillance among ANC attendees. However, the conduct of HIV sentinel surveillance among ANC attendees in the last few years has become inconsistent in several countries. Measuring trends in the HIV epidemic requires repeated comparable surveys. Countries, with the support of partners, must make every effort to conduct HIV sentinel surveillance among pregnant women attending antenatal clinics at least once every two years.

Reporting on HIV prevalence among young people aged 15-24 years is part of the Global AIDS Response Progress Reporting system. Countries are expected to report on this indicator under the GARPR system so as to monitor progress towards the attainment of MDG-6 by 2015. This can only be possible if countries are conducting regularly and consistently ANC based surveillance. ANC based data are also able to provide 'early' changes in HIV prevalence, otherwise countries will have to wait longer to 'notice' changes in the epidemic as population based surveys are usually conducted every five years. HIV sentinel surveillance among ANC attendees remains the cornerstone in monitoring HIV trends in countries with generalised epidemics. Population based

surveys should not replace HIV sentinel surveillance among ANC attendees.

HIV surveillance among key populations, especially among female sex workers is improving. Data on MSMs and PWID are not as readily available. Criminalisation, stigmatization and discrimination make it difficult for key populations to be accessed with surveillance systems and HIV interventions. As the dynamics of the HIV epidemic evolve in the region, it is paramount that countries double their efforts to obtaining an accurate "picture" of the HIV situation, including accurate epidemiological (biological and behavioural) data among key populations so as to design tailor made, effective and accessible interventions and services.

Data on prevalence of STIs remain scarce in the region. Countries should revitalise their efforts in collecting, analysing and reporting on STI data, in particular on syphilis. In addition, countries should endeavour to collect data on STIs from special studies, research or projects and include these data in their national HIV surveillance and GARPR reports.

As countries expand and accelerate the provision of antiretroviral therapy to people living with HIV, they may start experiencing a rise in HIV prevalence because people infected with HIV are living longer. This makes the measuring of HIV incidence critical in monitoring the transmission of new HIV infections and in assessing the effectiveness of HIV programmes. However, measuring HIV incidence in the region using the

variety of laboratory assays that have been developed for this purpose remains a challenge. There has been no simple and reliable method yet to routinely assess HIV incidence in the region (33). Countries will have to pay more attention to measuring HIV prevalence trends among young people aged 15-24 years as this is a feasible “proxy” for measuring HIV incidence in the region.

In general, empirical data on mortality, including HIV/AIDS related mortality, are limited in the region. Most of the data on mortality and trends are derived from mathematical modelling. Countries need

to revitalize their vital statistics registration systems, which would help them to assess causes and trends of mortality including HIV/AIDS related deaths.

Surveillance of HIV infection among infants and children is limited in the Region. As countries make efforts to improve early infant diagnosis (EID) of HIV, they should be encouraged to put mechanisms in place to systematically collect, compile and analyse the results from EID. This could assist in monitoring trends in HIV infection in infants. Countries should be encouraged to include children, where feasible, in population-based surveys.

# REFERENCES

1. UNAIDS. *Global Report UNAIDS Report on the global AIDS epidemic 2013*. 2013 UNAIDS, Geneva.
2. WHO/AFRO. HIV in the *WHO African Region Progress towards achieving Universal Access to priority health sector interventions 2011 Update*. 2011. WHO/AFRO, Brazzaville.
3. UNAIDS. *Report on the Global AIDS epidemic 2012*. 2012 UNAIDS, Geneva.
4. WHO and UNAIDS. *Guidelines for second generation HIV surveillance*. 2000. UNAIDS/WHO working group on Global HIV/AIDS and STI surveillance. [www.who.int/hiv/pub/surveillance/en/cds\\_edc\\_2005\\_pdf](http://www.who.int/hiv/pub/surveillance/en/cds_edc_2005_pdf), accessed 5 September 2013
5. Garcia-Calleja JM, E Zanlewski, P D Ghys., et al. *A global analysis of trends in the quality of HIV serosurveillance*. *Sex transm* 2004; 80 (Suppl.1) :125-134
6. WHO. *Sentinel Surveillance for HIV infection: A method to monitor HIV infection trends in population groups*. 1988. WHO/GPA/DIR 88.8. WHO Geneva. [http://cedoc.cies.edu.ni/general/2nd-generation%20\(D\)/Surveillance%20Guidelines/HIV%20serosurveillance/sent%20surv.pdf](http://cedoc.cies.edu.ni/general/2nd-generation%20(D)/Surveillance%20Guidelines/HIV%20serosurveillance/sent%20surv.pdf), accessed 5 September 2013
7. WHO/UNAIDS. *Guidelines for measuring national HIV prevalence in population based surveys*. 2005. WHO, Geneva.
8. Jacobson J. *HIV surveillance of key populations in Sub-Saharan Africa*. 29 September 2013. Draft version 1.0 (in press)
9. *Country GARPR reports 2012*. <http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries> (for all the countries mentioned in the section)
10. UNAIDS RTS ESA. *Mauritius*. <http://www.unaidsrtesa.org/region/countries/mauritius>, UNAIDS Sunning hill, South Africa accessed 20 Sept 2013
11. Magadi Monica A., The disproportionate high risk of HIV infection among the urban poor in sub-Saharan Africa. *AIDS Behave* ( April 2013) 17:1645-1654 DOI 10.1007/s10461-012-0217-y
12. United Nations. *Millennium Goal Indicators*. <http://mdgs.un.org/unsd/mdg/metadata.aspx?indicatorId=D&seriesId=741>
13. Algeria. *Raport d'activité sur la riposte nationale au sida –Algérie 2012- Suivi de progress sur Declaraction Politique sur leVIH/SIDA de 2011*
14. Republique Du Senegal, Conseil National Lutte Contre le SIDA Secrétariat Exécutif National, ONUSIDA Programme Commun des Nations Unies Sur le VIH/SIDA. *Raport de situation sur la Riposte Nationale a l'epidemie de VIH/SIDA Sénégal: 2010-2011. Suivi la Declaration Politique Report sur le VIH 2011*. Mars 2012
15. Sao Tome and Principe. GARPR country report 2012
16. Republique du Niger, Presidence de la Republique, Conseil National de Lutte Contre le SIDA, Coordination Intersectorielle de Lutte Contre les IST/VIH/SIDA. *'Suivi de la Déclaration Politique sur le VIH/SIDA 2011 Rapport d'activité sur la Riposte au SIDA au Niger 2012*. 2<sup>nd</sup> April 2012
17. Ghana AIDS Commission. *Ghana Country AIDS Progress Report Reporting period January 2010-December 2011*. March 2012
18. Vuylsteke B, Semde G, Sika L., et al. HIV prevalence of HIV and sexually transmitted infections among male sex workers in Abidjan, Cote d'Ivoire: need for services tailored to their needs. 2012 *Sexually Trans Infect.* (4):288-93. Doi:10.1136/sextrans-2011-050276
19. Sonya Arreola, Pato Hebert, Keletso Makofane., et al. *Access to HIV prevention and treatment for men who have sex with men Findings from the 2012 Global Men's Health and Rights study (GMHR)*. December 2012. The Global Forum on MSM and HIV (MSMGF), Oaklands, USA



20. Malawi Government. *2012 Global AIDS Response Progress Report: Malawi Country Report 2010-2011*. 3<sup>rd</sup> March 2012
21. The Kingdom of Swaziland. *Swaziland Country Report on monitoring the Political Declaration on HIV and AIDS*. March 2012.
22. Seychelles. *Global AIDS Response Country Progress Report 2012. Reporting period Jan 2010-December 2011*. 31<sup>st</sup> March 2012
23. Republic of Mauritius, National Secretariat Prime Minister's Office. *Global AIDS Response Progress Report*. March 2012
24. Philip Nieburg and Clisa Carthy. *HIV prevention among Injections Drug Users in Kenya and Tanzania. New Opportunities for Progress. A report of the Centre for Strategic and International Studies*. 2011 CSI , Washington DC, USA
25. The Republic of Uganda, National AIDS Commission. *National Strategic Plan for HIV and AIDS 2011/12-2014/15*. Draft November 2011
26. Republic of South Africa, Department of Health Directorate of Epidemiology and Surveillance. *The 2011 National Antenatal Sentinel HIV and Syphilis Prevalence Survey in South Africa*. 2011
27. Ministry of Health, Lesotho. *Sentinel HIV/Syphilis Survey 2011*. March 2012
28. Institut National de la Statistique et de la Démographie (INSA) and MEASURE DHS, ICF International. *Enquête Démographique et Santé et à Indicateurs Multiples du Burkina Faso (EDSBF-MICS IV) 2010 Prevalence VIH*. 2010 Ouagadougou, Burkina Faso, MEASURE DHS, ICF Calverton, Maryland, USA
29. Ministry of Health Botswana. *2011 Botswana Second Generation HIV/AIDS Antenatal Sentinel Surveillance Technical Report*
30. *Uganda AIDS Indicator Survey (AIS) 2011*. August 2012. Ministry of Health Uganda, ICF Calverton Maryland USA, Centre for Disease Control and Prevention, Entebbe, Uganda, US Agency for International Development, Kampala, Uganda, WHO Uganda, Kampala.
31. National AIDS and STI Programme, Ministry of Health. *Kenya Indicator Survey 2012: Preliminary Report*. September 2013. Nairobi, Kenya.
32. Asamoah Odei, E., Calleja, JMG and Boerma JT. *HIVprevalence and trends in Sub Saharan Africa: no decline and large subregional differences*. 2004. The Lancet Vol.364, Issue 9428 pgs 35-40
33. UNAIDS: UNAIDS. *Regional Fact sheet 2012 Sub Saharan Africa*. UNAIDS; 2012. Geneva, Switzerland

## 3. HIV TESTING AND COUNSELLING

### Key messages

- Availability and uptake of HIV testing and counselling services in the WHO African Region have improved greatly over the years with some countries heading towards Universal Access.
- Most countries in the region are implementing the HIV Provider Initiated Testing and Counselling (PITC) policy in health facilities. This is being supplemented with community-based approaches for HIV testing and counselling.
- Knowledge of HIV serostatus largely remains low with more than half of the people living with HIV not knowing their HIV serostatus.
- People in urban areas, women and the wealthier are more likely to have received an HIV test and counselled in the last 12 months. Uptake of HIV testing and counselling is relatively low among adolescents.
- All persons should be motivated to test and know their HIV serostatus as it is key to accessing HIV prevention, treatment, care and support services.

### 3.1 Introduction

HIV testing and counselling (HTC) is a key entry point to achieving Universal Access to HIV prevention, treatment, care and support services. Available evidence indicates that HCT has led to increased uptake of HIV interventions and services. For example, HIV testing rates have increased in antenatal clinics (1). Knowledge of HIV serostatus helps people who test HIV negative to make specific decisions on how to reduce their risk of exposure to HIV. Knowing one's HIV serostatus enables initiation of timely treatment and care. It also allows one to take action to protect one's sexual partner and to plan for the future. HIV testing and counselling is the first step to ensuring that the benefits of antiretroviral therapy are maximized.

In 2004, UNAIDS and WHO recommended the following types of HIV testing; voluntary counselling and testing (VCT); diagnostic testing for persons with signs and symptoms of HIV related diseases or AIDS including testing of all tuberculosis (TB) patients; routine offer of HIV testing by health care providers to clients with sexually transmitted infections (STIs), HIV testing in PMTCT programmes and mandatory HIV testing of donors (body fluids including blood and body parts (2). In line with this, the WHO Regional Office for Africa developed and disseminated Regional Guidelines for HTC to all the countries in the WHO African Region in 2006 (3).

WHO encourages countries to decentralize HIV testing and counselling services and provide them in a wide variety of settings appropriate to the local context. In line with this, countries have utilized multiple innovative approaches in addition to health facility based testing, to increase the availability and uptake of HIV testing and counselling services. Some of the approaches include home based (door to door testing, setting up mobile sites within communities etc.), mobile testing (using vans, trucks or other mobile sites in addition to the fixed sites), stand-alone testing sites, workplace testing, school and university testing, testing during events such as on World AIDS Day, national or sub-national AIDS campaigns, and testing during times when most

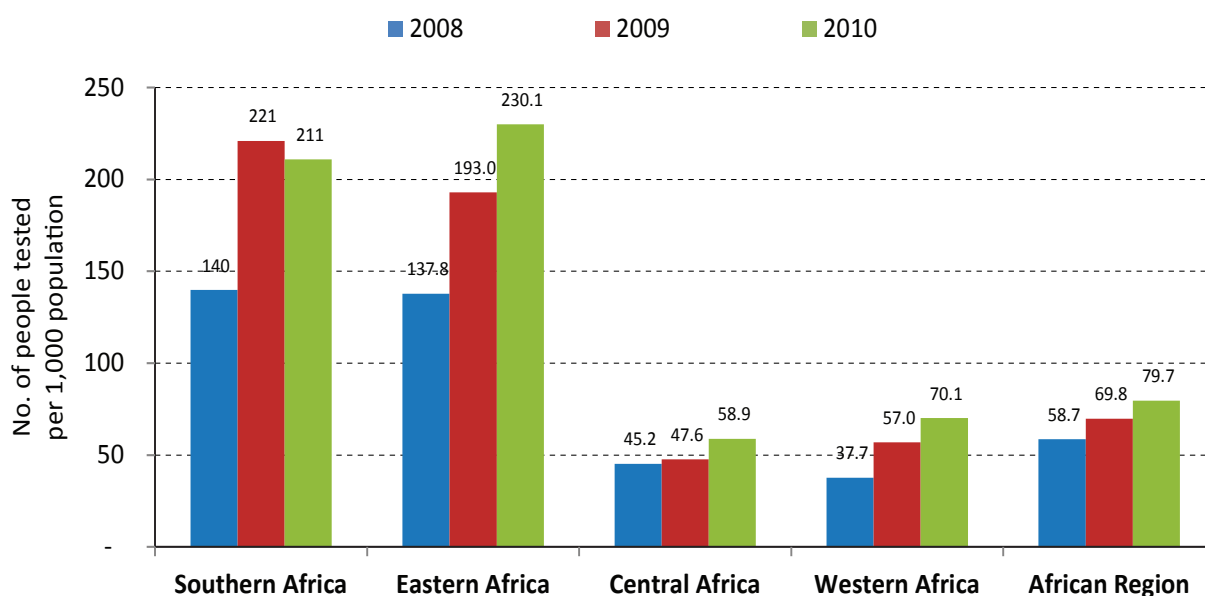
clients are not expected such as on weekends, evenings and at night.

This chapter reviews the progress in improving access to HIV testing and counselling services made by countries in the WHO African Region during the period 2008 and 2012.

### 3.2 Uptake of HIV testing and counselling

The number of people aged 15 years and above who received an HIV test and were counselled increased from 23,424,868 in 2007 to 44,997,719 in 2010 in the WHO African Region, an increase of more than 90%. This increase was seen in all the sub-regions (Figure 3.1).

**Figure 3.1: No. of people aged 15 years and above who were tested for HIV and received results per 1000 population, WHO Africa Region, 2008-2010**



Sources: WHO/AFRO HIV in the WHO African Region Progress towards achieving universal access to priority health sector interventions 2011 update and WHO/AFRO HIV/AIDS database and WHO/UNAIDS/UNICEF Global HIV/AIDS Response Epidemic update and health sector progress towards Universal Access Progress Report 2011

Table 3.1 shows the number of tests performed among people aged 15 years and above and the number of HIV tests among this age group per 1000 population for 2008 and 2010 by country. Uptake of HIV testing and counselling was uneven between countries in 2010. The ratio of people aged 15 years who were tested for HIV and received results per 1000 population ranged from 2.6 in Algeria to 20.2 in DRC, 30.9 in Nigeria and then 469.2 in Rwanda in 2010. The regional and subregional trends mask the incredible achievements made by some countries. For example the ratio increased from 259.2 in 2008 to 469.2 in 2010 in Rwanda while in Nigeria and DRC progress was slow. In Nigeria, the ratio of number of tests performed among people aged 15 years and over per 1000 population increased from 31.4 in 2008 to 35.1 in 2009 and then dropped to 30.5% in 2010.

**Table 3.1: Trends in numbers and proportion (%) of HIV tests performed among people aged 15 years and above, and number of tests per 1000 population by country and by subregion, WHO African Region, 2008-2010**

Country	Number of people aged 15 years and over who received HIV testing and counselling, reported number			People aged 15 years and over who received HIV testing and counselling, estimated number per 1000 adult population		
	2008	2009	2010	2008	2009	2010
<b>African Region</b>	<b>23,424,868</b>	<b>39,772,358</b>	<b>44,997,719</b>	<b>58.7</b>	<b>69.8</b>	<b>79.7</b>
<b>Southern Africa</b>	<b>2,651,019</b>	<b>12,257,928</b>	<b>11,739,593</b>	<b>139.8</b>	<b>221</b>	<b>211</b>
Botswana	218,313	330,159	353,430	209.6	311	323.6
Comoros	2,570	3,281	4,428	7.5	9.4	12.6
Lesotho	213,521	251,242	235,295	216.1	250.6	211
Madagascar	629,642	324,809	192,813	70.1	35	19.9
Mauritius	...	33,744	44,769	...	47.4	61.6
Mozambique	...	1,201,942	1,139,166	...	114.4	106.3
Namibia	163,871	249,011	136,305	149.3	221	114.8
South Africa	...	6,989,312	6,553,952	...	256.1	240.1
Swaziland	108,334	149,755	148,072	186.3	251.3	243.7
Zambia	511,266	1,582,621	1,318,975	90.9	273.9	224.1
Zimbabwe	803,502	1,142,052	1,612,388	130.3	182.9	254.8
<b>Eastern Africa</b>	<b>14,251,246</b>	<b>18,923,698</b>	<b>24,187,876</b>	<b>137.8</b>	<b>193</b>	<b>230.1</b>
Eritrea	137,339	132,829	127,202	55.6	52.2	48.2
Ethiopia	4,817,100	6,630,647	9,407,180	129.3	172.3	235.6
Kenya	1,833,689	4,433,557	5,738,282	97.5	230	290.8
Malawi	1,693,923	1,449,645	1,726,762	258	213.7	258.4
Rwanda	1,241,616	1,932,420	2,407,073	259.2	393.8	469.2
Seychelles	8,858	10,808	10,867	192.3	233.4	224.6
Uganda	2,015,057	2,363,468	2,654,683	146.3	165.1	181
United Republic of Tanzania	2,503,664	1,970,324	2,115,827	128.6	98.3	103.1

**Table 3.1: Trends in numbers and proportion (%) of HIV tests performed among people aged 15 years and above, and number of tests per 1000 population by country and by subregion, WHO African Region, 2008-2010**

Country	Number of people aged 15 years and over who received HIV testing and counselling, reported number			People aged 15 years and over who received HIV testing and counselling, estimated number per 1000 adult population		
	2008	2009	2010	2008	2009	2010
<b>Central Africa</b>	<b>1,705,086</b>	<b>1,480,215</b>	<b>2,416,590</b>	<b>45.2</b>	<b>47.6</b>	<b>58.9</b>
Angola	...	...	442,200	...	...	51.6
Burundi	236,988	281,959	373,895	57.3	65.6	85.8
Cameroon	866,083	450,022	648,019	93.9	47.6	67.7
Central African Republic	56,177	136,202	118,045	27.1	64.2	55.6
Chad	53,056	66,191	57,878	10.8	13.1	11.4
Congo	79,422	82,332	89,546	45.2	45.8	45.5
Democratic Republic of the Congo	393,000	392,491	599,895	13.8	17.7	20.2
Equatorial Guinea	...	24,256	24,075	...	74.6	70.2
Gabon	...	33,550	48,348	...	44.5	62.2
Sao Tome and Principe	20,360	13,212	14,689	259.3	164.8	179.3
<b>Western Africa</b>	<b>4,817,517</b>	<b>7,110,517</b>	<b>6,653,660</b>	<b>37.7</b>	<b>56.95</b>	<b>70.1</b>
Algeria	...	...	53,736	...	...	2.6
Benin	312,418	280,982	318,389	77	67	76.9
Burkina Faso	424,758	602,961	565,311	60	82.6	73.4
Cape Verde	17,000	25,075	...	64.9	93.5	...
Côte d'Ivoire	311,145	727,290	791,424	31.9	72.5	84.6
Gambia	44,127	47,549	58,326	56.6	66	70.1
Ghana	467,936	1,253,312	1,063,085	39.9	104.4	87.3
Guinea	67,275	74,090	166,576	14.7	15.8	35.8
Guinea-Bissau	21,061	24,871	73,476	29.3	33.8	102.2
Liberia	63,442	80,295	170,341	35.5	43	90.3
Mali	116,361	255,835	239,115	19.3	41.3	34.3
Mauritania	15,444	9,498	7,738	9.5	5.7	4.4
Niger	130,354	358,071	425,696	20.9	55.6	64.8
Nigeria	2,241,727	2,570,386	2,287,805	31.4	35.1	30.9
Senegal	245,670	352,197	...	42	58.3	...
Sierra Leone	157,120	281,218	232,452	58.7	102.7	82.4
Togo	181,679	166,887	200,190	57.3	51.1	66.5

Source: WHO/AFRO HIV/AIDS database

### 3.3 Coverage of HIV testing and counselling services

Coverage of HIV testing and counselling in the general population is assessed through population based surveys such

as Demographic and Health Surveys (DHS) or AIDS Indicator Surveys (AIS), in which respondents respond to the question on 'whether they have ever had an HIV test'. In the case of respondents who say "Yes" they are asked "how

many months ago was your most recent HIV test?” The respondents who report that their most recent test was in the past 12 months are the ones recorded as ‘tested in the 12 months preceding the survey’. Being tested in the past 12 months is the closest proxy for knowledge of one’s current HIV serostatus.

The data show that women were more likely to report taking an HIV test in the past 12 months than men in 24 out of the 30 countries in the WHO African Region that conducted DHS/AIS surveys between 2003 and 2012 (Table 3.2).

**Table 3.2: Uptake of HIV testing and counselling in the last 12 months by sex in selected countries, WHO African Region, most recent year**

Subregion	Country	Survey	Year	Women		Men	
				N	%	N	%
Southern Africa	Lesotho	DHS	2009	7,624	42	3,008	24
	Madagascar	DHS	8-09	8,547	4.2	7,645	3.6
	Malawi	DHS	2010	23,020	...	6,818	31.3
	Mozambique	AIS	2009	5,674	17	4,168	8.9
	Namibia	DHS	6-07	9,804	28.6	3,915	17.6
	Swaziland	DHS	2006-2007	4,987	21.9	4,156	8.9
	Zimbabwe	DHS	2010-2011	9,171	33.6	7,110	20.5
Eastern Africa	Ethiopia	DHS	2011	16,515	20	12,834	20.7
	Kenya	DHS	2012	...	...	...	...
	Tanzania	DHS	2010	10,139	29.5	2,527	25
	Uganda	AIS	2011	11,160	...	8,735	23.2
	Zambia	DHS	2007	7,146	18.5	5,995	11.7
Central Africa	Burundi	DHS	2010	9,389	18.7	3,760	11.7
	Cameroon	DHS	2011	7,457	22.3	6,455	20.4
	Congo	AIS	2009	6,550	8.5	5,863	7.1
	DRC	DHS	2007	9,995	4.1	4,316	3.8
	Gabon	DHS	2012	...	12.4	...	8.9
Western Africa	Benin	DHS	2006	17,794	6.5	4,615	4.8
	Burkina Faso	DHS	2010	17,087	11.2	6,500	8.4
	Chad	DHS	2004	6,085	0.5	1,682	1.7
	Cote d'Ivoire	AIS	2005	5,183	3.7	4,503	3.2
	Ghana	DHS	2008	4,916	6.8	4,058	4.1
	Guinea	DHS	2005	7,954	1.1	2,709	2.9
	Liberia	DHS	2007	7,092	1.6	6,009	2.3
	Mali	DHS	2006	14,583	3.1	3,704	2.7
	Niger	DHS	2006	9,223	0.9	3,101	1.6
	Nigeria	DHS	2008	33,385	6.6	13,808	6.5
	Rwanda	DHS	2010	13,671	38.6	5,687	37.7
	Senegal	DHS	2010-2011	15,688	13.6	4,417	9
	Sierra Leone	DHS	2008	7,374	4.1	2,944	3.4

...=data not available

Sources: *www.measuredhs.com (HIV/AIDS Indicators Survey Database)*, Staveteig, S., et al 2013 'Demographic Patterns of HIV testing uptake in Sub Saharan Africa DHS Comparative reports 30' and DHS country reports in selected countries.

Rwanda (2010) had the highest proportions of both women and men reporting having an HIV test in the past 12 months (Figure 3.2). The family centred approach to HIV prevention, care and support with a focus of involving

men in PMTCT services which includes couples HIV testing and counselling largely explains the increased uptake of HIV testing and counselling in men in Rwanda.

**Figure 3.2: Proportion (%) of women and men aged 15 years and above reporting having taken an HIV test and received results in the past 12 months by sex in selected countries, WHO African Region, most recent year**

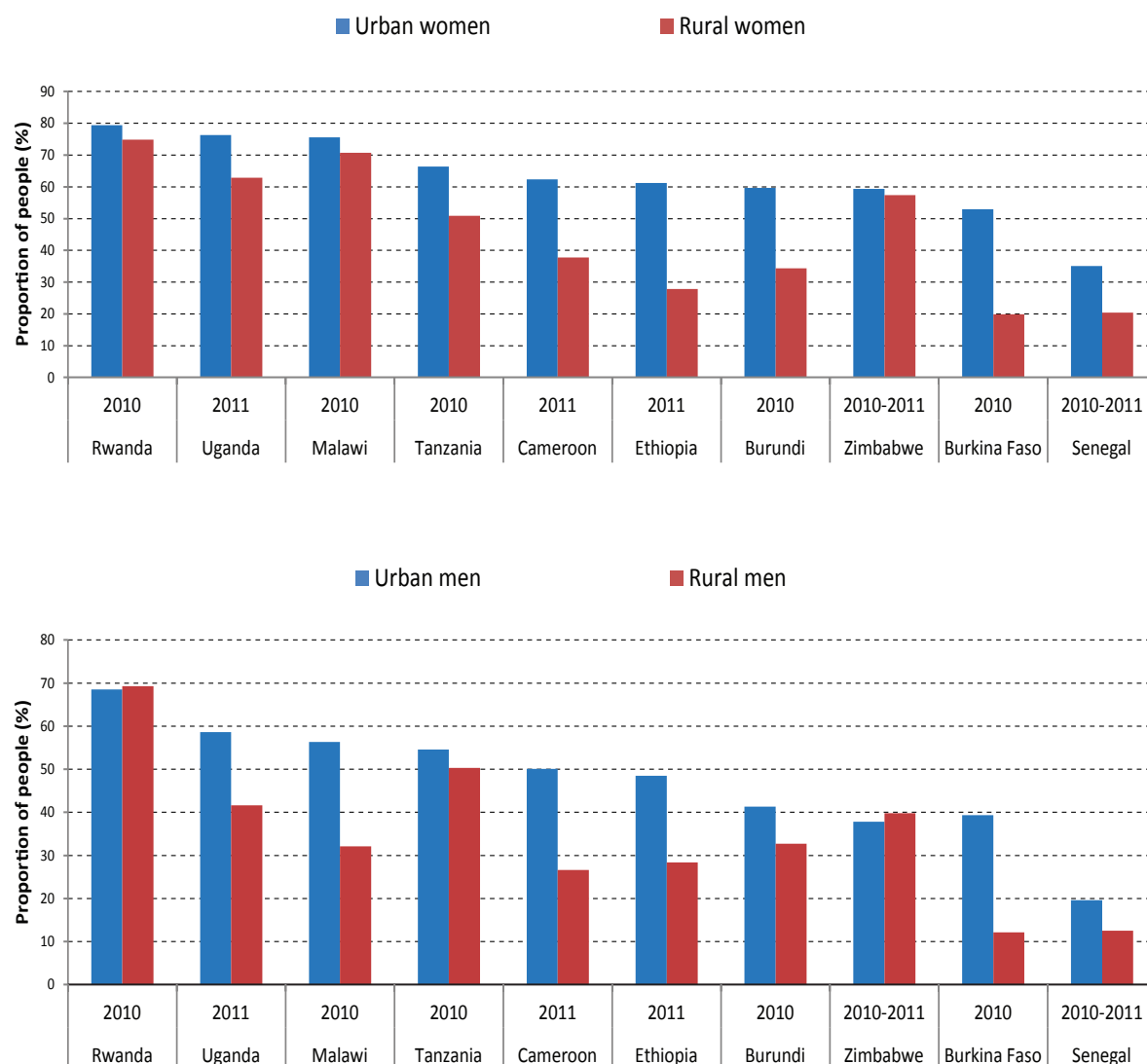


Sources: [www.Measuredhs.com](http://www.Measuredhs.com) (HIV/AIDS Indicators Survey Database), Staveteig, S., et al 2013 'Demographic Patterns of HIV testing uptake in Sub Saharan Africa DHS Comparative reports 30' and DHS country reports in selected countries.

Women and men in urban areas were more likely to report having ever had an HIV test than their rural counterparts (Figure 3.3). However, in Malawi (2010), Rwanda (2010) and Zimbabwe (2010/2011), the differences between women and men in rural and urban areas

reporting ever having an HIV test were small. In Malawi, national testing days and national testing weeks have largely contributed to the increased uptake of HIV testing and counselling services, including in rural areas (4).

**Figure 3.3: Proportion (%) of women and men aged 15 years and above reporting ever having an HIV test by sex and by residence in selected countries, WHO African Region, most recent year**

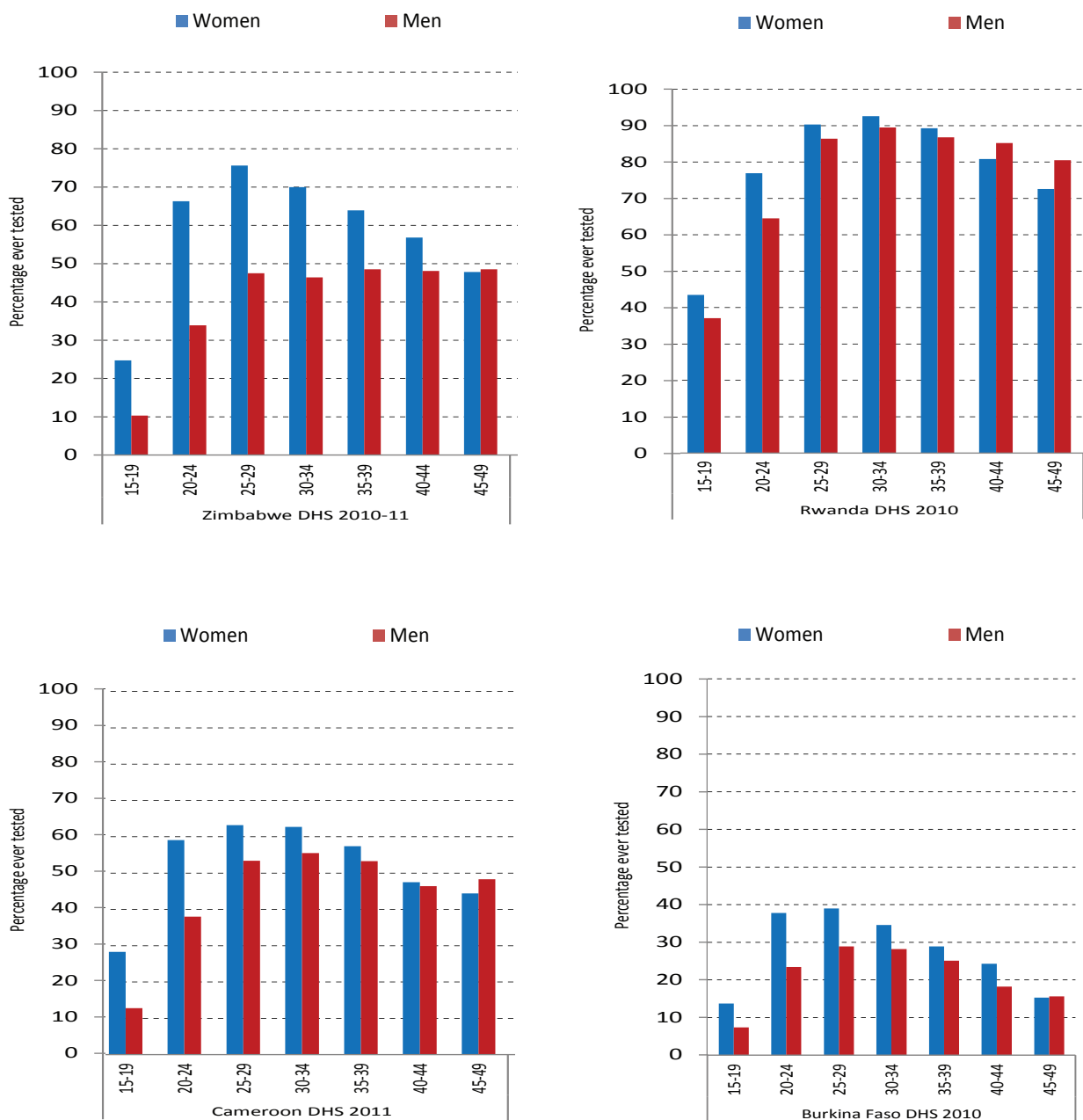


Sources: [www.measuredhs.com](http://www.measuredhs.com) (HIV/AIDS Indicators Survey database), Staveteig, S., et al 2013 'Demographic Patterns of HIV testing uptake in Sub Saharan Africa DHS Comparative reports 30' and DHS country reports in selected countries.

Population based surveys conducted in adolescents (men and women) less the WHO African Region indicate that likely to report taking an HIV test than uptake of HIV testing and counselling is those in the older age groups (Figure influenced by age in all countries with 3.4).



**Figure 3.4: Uptake of HIV testing and counselling by age in selected countries, WHO African Region, most recent year**

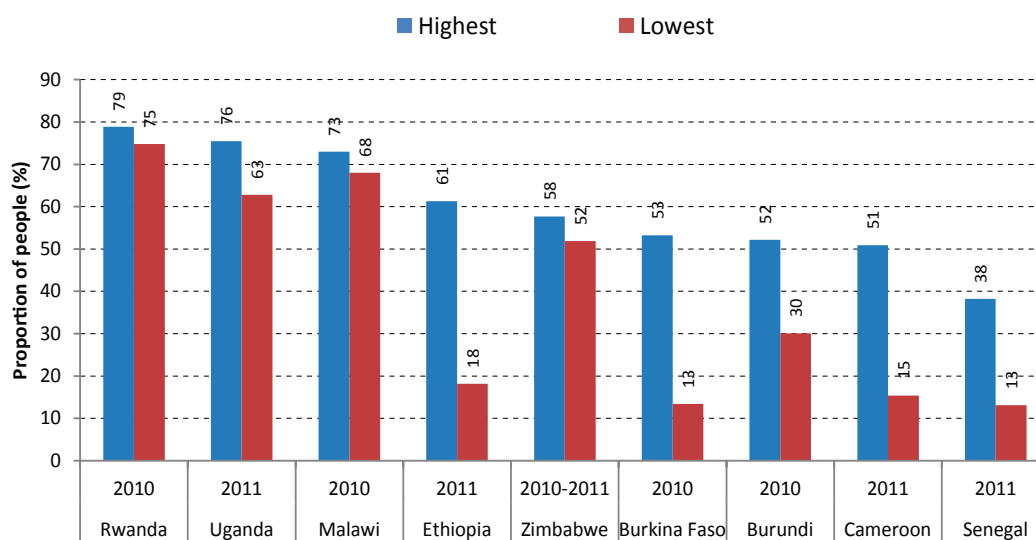


Source: Staveteig, S., et al 2013 'Demographic Patterns of HIV testing uptake in Sub Saharan Africa DHS Comparative reports 30'

Other factors that appear to influence the uptake of HIV testing and counselling in the WHO African Region include wealth, the level of education, ever having had sex and marital status (5). However, except for age, the differences were less marked in

countries with a high uptake of HIV testing and counselling. HIV testing in the majority of the countries, with the exception of Rwanda and Malawi, increases with level of education and wealth (Figure 3.5).

**Figure 3.5: Proportion (%) of women and men reporting having ever had an HIV test by wealth category in selected countries, WHO African Region, most recent year**



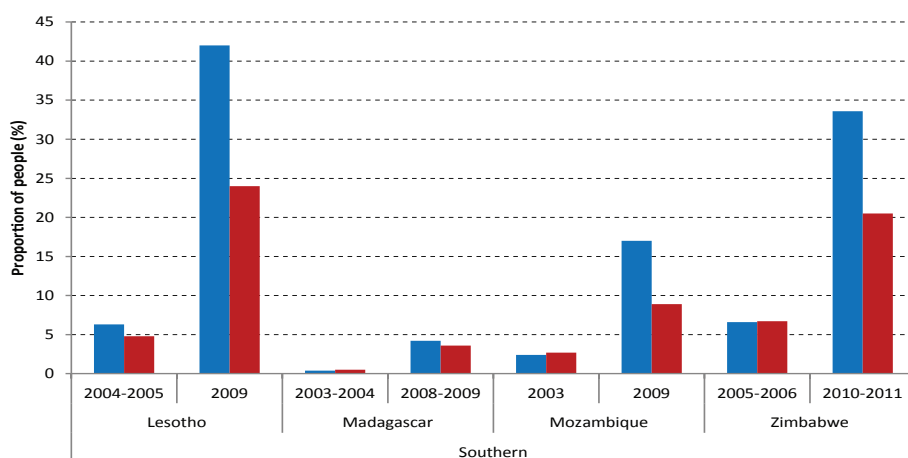
Sources: [www.measuredhs.com](http://www.measuredhs.com) (HIV/AIDS Indicators Survey Database), Staveteig, S., et al 2013 'Demographic Patterns of HIV testing uptake in Sub Saharan Africa DHS Comparative reports 30' and DHS country reports in selected countries

### 3.4 Trends in the coverage of HIV testing and counselling services

Data from population based surveys show increasing proportions of women and men reporting having taken an

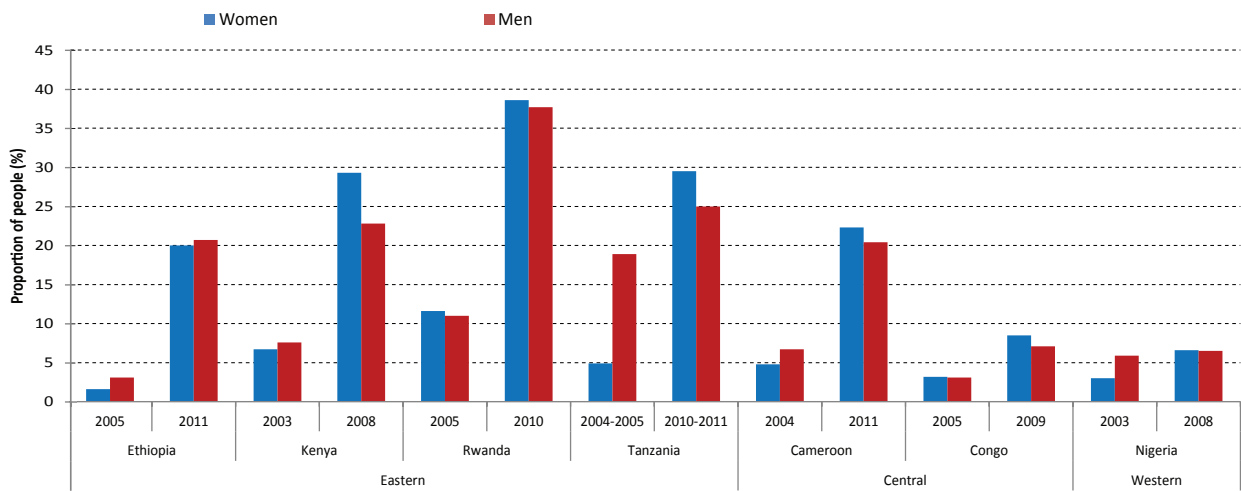
HIV test in the last 12 months over the years. Kenya, Lesotho, Rwanda, Tanzania and Zimbabwe showed marked increases among both men and women while Nigeria, Madagascar and Congo had a small increase (Figure 3.6).

**Figure 3.6: Trends in the proportion (%) of women and men aged 15 years and above who reported having an HIV test in the past 12 months by sex in selected countries, WHO African Region, 2001-2012**



Sources: [www.measuredhs.com](http://www.measuredhs.com) (HIV/AIDS Indicators Survey Database), DHS country reports in selected countries.

**Cont'd: Figure 3.6: Trends in the proportion (%) of women and men aged 15 years and above who reported having an HIV test in the past 12 months by sex in selected countries, WHO African Region, 2001-2012**



Sources: [www.measuredhs.com](http://www.measuredhs.com) (HIV/AIDS Indicators Survey Database), DHS country reports in selected countries.

Other factors that appear to influence the uptake of HIV testing and counselling in the WHO African Region include wealth, the level of education, ever having had sex and marital status (5). However, except for age, the differences were less marked in countries with a high uptake of HIV testing and counselling. HIV testing in the majority of the countries with the exception of Rwanda and Malawi increases with level of education and wealth (Figure 3.5).

### 3.5 Expanding HIV testing and counselling through innovative mechanisms and approaches

In addition to PITC, other HIV testing and counselling approaches are being

implemented to further expand and rapidly scale up HTC services in countries. For example the 2010 National HIV Testing Campaign conducted in South Africa (Box 3.1) resulted in over 13 million people being tested and counselled. Couples testing in Rwanda (Box 3.2) has resulted in an increased uptake of HIV testing and counselling among men. In Kenya, the adoption of multiple approaches to HIV testing and counselling (Box 3.3) is improving access to HTC services in remote countries and to key populations. District-wide Home Based HIV counselling and testing in one district in Uganda (Box 3.4) demonstrated that HTC is feasible and can contribute to increasing the percentage of people knowing their HIV serostatus.

### Box 3.1: National HIV Testing and Testing Campaign in South Africa

In April 2010, the President of South Africa launched the largest ever in the world national HCT campaign lasting for 12 months. The campaign was to offer opportunities to South Africans to be tested for HIV, screened for TB and other chronic diseases such as diabetes and hypertension. This was one of the biggest partnerships between government, civil society and the private sector (mining, automobile and textile). The campaign

resulted in a large number of people coming for counselling and HIV testing. The number of persons tested throughout the campaign was three times more than the number that the public sector was able to screen annually. By June 2011, over 13 million South Africans had been tested for HIV against the set target of 15,000,000 by 2015 (*Source: Republic of South Africa, GARPR 2012*) (6)

### Box 3.2: Couples Testing in Rwanda

In 2009, Rwanda promoted a family-centred approach to HIV prevention, care and support services with a focus on involving men in preventing mother to child transmission. The following strategies were used: high level advocacy with the involvement of high level leaders, building the capacity of health care workers on

HIV counselling and testing for couples, public awareness campaigns on couple testing, involving male partners and organizing weekend HIV counselling and testing sessions. As a result, uptake of HIV testing among male partners reached an average of 85% in 2009, up from 7% in 1999 (*Source: Rwanda GARPR 2012*) (7)

### Box 3.3: Multiple Approaches to HIV Testing and Counselling in Kenya

The Kenya Government target is to counsel and test 2 million Kenyans for HIV annually. In line with this, Kenya has shifted from primarily client initiated models; mainly based on voluntary counselling and testing (VCT) to include other approaches to HIV testing and counselling. By the end of 2009, 73% of health facilities were providing Provider Initiated Testing and Counselling (PITC). As a result, the number of HIV tests performed in health facilities rose by 65% in 2010 alone. PITC led to the highest proportion (39%) of people diagnosed with HIV in 2009, as compared to 32% in VCT services, 17% in PMTCT clinics and 10% in TB care settings in the same year. 'Moonlight' HIV testing and

counselling (HTC) at truck stops provided counselling and HIV testing to 8,900 men and female sex workers over an 8-month period in 2009. Another project in Kiritiri reached more than 400 people with HTC on two weekends only. Two national campaigns, one lasting for one month and the other three weeks, reached 2.6 million people with HTC in 2010. A home based pilot project in the Suba district of Nyanza province showed an acceptance rate of HIV testing of over 90% and demonstrated that home-based testing was feasible. This led to the scale up of home-based door to door testing, even in remote rural areas with little access to health care *Sources: NASCOP 2010, NACC and NASCOP, 2012* (8,9)

### **Box 3. 4: District-wide Home Based HIV Counselling and Testing in one Rural District in Uganda**

In April 2010, the President of South A home based HIV counselling and testing programme was implemented in Bushenyi, a rural district in Uganda from September 2004 to March 2007. About 90% of the people aged more than 14 years did not know their HIV serostatus and had never been tested for HIV. Teams, each including a counsellor and a laboratory assistant, systematically visited homes offering HIV counselling and testing for all people aged 14 years and above and exposed children (children whose mothers had died of AIDS). People found HIV positive were provided with cotrimoxazole

prophylaxis, given insecticide treated nets (Bushenyi district is a malaria endemic district) and equipment for treating drinking water at home. Those found living with HIV were referred for assessment for antiretroviral therapy. The acceptance level for HIV testing and counselling was high (94%) and 90% of people who had never been tested for HIV got to know their HIV serostatus. The results from this programme demonstrated that home based HTC was feasible.

*Source: Tumwesigye E., Wana G., Kasasa, S., et al, 2010 (10)*

### **3.6 Serodiscordant couples and HIV testing and counselling**

HIV transmission increases substantially in couples with one partner infected and the other partner not infected because condom use is least likely and there are repeated sexual exposures. Serodiscordant couples are found both in rural and urban areas but because of the higher HIV prevalence in urban areas serodiscordant occurrence is higher in urban areas. Serodiscordant couples cannot be distinguished from the general population and thus can only be identified through HIV testing and counselling services. Most serodiscordant couples do not know their HIV serostatus and have a low level of knowledge about discordancy (11). Modes of Transmission (MOT) analyses conducted in countries such as Lesotho, Mozambique, Rwanda, Uganda and Rwanda in 2007-2008 estimated that the proportions of new HIV infections arising from transmission within a stable union ranged from 10%

in Kenya to 56% in Rwanda and that the probability of HIV transmission within a cohabiting serodiscordant couple was 0.2 over a 12 month period (11).

### **3.7 Challenges and the way forward**

In the last 3-5 years, there has been an increase in the proportion of people receiving HIV testing and counselling in the last 12 months. This is largely due to the adoption of a policy on PITC and the use of multiple and wide ranging approaches, including community based approaches.

Despite the progress made, the majority of the people in the WHO African Region do not know their HIV serostatus. Indeed more than half of the people living with HIV do not know their HIV serostatus. HIV testing and counselling rates are low among adolescents and serodiscordant couples.

Other challenges include inadequate human resource capacity for HIV testing and counselling, stock outs of testing kits and other supplies and infrastructural issues that do not allow for discreet HIV testing and counselling especially in health facilities. There is still inadequate funding for programmes, high levels of stigma and discrimination, legal frameworks, that make it difficult for some populations such as teenagers and key populations to access HIV services. In addition, there are weak systems for monitoring and evaluation of HIV testing and counselling services.

All people including those in rural areas, adolescents and key populations should be motivated to test and know their HIV serostatus through the use of multiple models and approaches. Further decentralization of HIV testing and counselling services and linkage of HTC to other health programmes such as Maternal and Child Health Care, adolescent and reproductive health, sexually transmitted infections (STI) treatment clinics, TB clinics, inpatient wards and outpatient clinics and Primary Health Care outreach activities need to be promoted.

HIV self-testing could serve as an additional approach to improve uptake of HIV testing. However, it does not provide a chance for the person testing him/herself to receive basic information on HIV/AIDS or pretest counselling. More information will be needed on the psychological effects on a person who tests positive from HIV self-testing. Follow up and referral services including those for confirming a positive HIV test be accessible to the users of HIV self-testing kits.

Structural barriers including legal and regulations that make it difficult for adolescents and key populations to access HIV testing and counselling services and for health care providers to access these populations, need to be addressed. There is the need to ensure that as countries expand and scale up HIV testing and counselling services, the quality of HIV testing be closely monitored so as to maintain standards and ensure high quality care.

# REFERENCES

1. Baggaley, R., Hensen, B., Ayoge, O., et al: *From caution to urgency: evolution of HIV testing and counseling in Africa*. Bulletin of World Health Organisation 2012;90:652-658B
2. WHO and UNAIDS. *UNAIDS/WHO policy statement on HIV testing*. [http://www.who.int/rpc/research\\_ethics/hivtestingpolicy\\_en\\_pdf.pdf](http://www.who.int/rpc/research_ethics/hivtestingpolicy_en_pdf.pdf), accessed 24 September 2013
3. WHO/AFRO. *HIV testing and counseling services in the WHO African Region: A survey of the eastern and southern Africa Subregion*, 2010. Brazzaville, Congo
4. Malawi Government: *2012 Global AIDS Response Progress Report. Malawi Country report for 2010-2012*. March 31, 2012
5. Staveteig, Sarah, Shaxiao O. Wang, Sarah K. Head, et al. *Demographic Patterns of HIV testing uptake in sub Saharan Africa. DHS comparative reports No.30*. 2013. Calverton, Maryland, USA: ICF international.
6. Republic of South Africa. *Global AIDS Response Progress Report 2012*
7. Rwanda Government. *Country Progress Report. Narrative Report Submission date 2012-03-30*. [www.unaids.org](http://www.unaids.org)
8. National AIDS and STI Control Programme, Ministry of Public Health and Sanitation. *National Guidelines for HIV testing and counseling in Kenya' second edition, October 2010*.
9. National AIDS Control Council (NACC) and National AIDS and STI Control programme. *Kenya AIDS epidemic update 2011*. 2012, Nairobi, Kenya.
10. Tumwesigye E., Wana, G., Kasasa, S., et al. *High uptake of home based, district wide, HIV counseling and testing in Uganda*. 2010 AIDS patient care STDs, 2010;24(11): 753-41. doi.10.1089/apc.2010.0096
11. Bishop M. and Foret K. *Serodiscordant couples in sub-Saharan Africa. What do survey data tell us?* February 2010 Washington DC: Futures Group. Health Policy Initiative Task Order 1
12. WHO/UNAIDS/UNICEF. *Global HIV/AIDS Response Epidemic update and health sector progress towards Universal Access Progress Report 2011*. 2011. WHO, Geneva
13. WHO/AFRO *HIV in the WHO African Region Progress towards achieving Universal Access to priority health sector interventions 2011 Update*. 2011. WHO/AFRO; 2011. Brazzaville, Congo

## 4. MAXIMIZING THE CONTRIBUTION OF THE HEALTH SECTOR IN HIV PREVENTION

### Key messages

- Countries in the WHO African Region have HIV prevention programmes that target young people. However, there are variations in the implementation of these programmes.
- As a result of strong leadership, commitment and good planning, considerable progress has been made in the 14 priority countries in scaling up of Voluntary Medical Male Circumcision services.
- Considerable progress has been made in ensuring blood safety in the region. However, only 45% of the total blood requirements is currently being met.
- “Virtually no country in the WHO African Region is providing interventions for key populations on an adequate scale and intensity”.

### 4.1 Introduction

The updated ‘HIV/AIDS: Strategy for the African Region’ (1) which was adopted by the WHO Regional Committee for Africa during its sixty-second session held in November 2012 provides directions for implementing the ‘WHO Global Health Sector Strategy on HIV/AIDS 2011-2015’ (2) in the WHO African Region. The aims of the Regional Strategy are to accelerate national HIV response and advance progress in achieving country targets for Universal Access to HIV prevention,

treatment, care and to contribute to achieving MDG 6 and other health related MDG goals, associated targets and to addressing the broader determinants of health. One of the key interventions promoted by the regional strategy is the scaling up of HIV prevention. The strategy underscores the importance of combining behavioural, biomedical and structural HIV prevention interventions tailored to national epidemics as the most effective approach to reducing new infections (Box 4.1).



#### **Box 4.1: Scale up HIV prevention interventions in the WHO African Region**

- Health promotion
- Behaviour change counselling
- Quality assured HIV testing and counselling
- Male and female condom programming
- Safe voluntary medical male circumcision (in high HIV prevalence settings with low male circumcision rates)
- Early initiation of antiretroviral therapy
- Infection control and standard precautions including injection and surgical safety blood safety
- Safe waste disposal and post exposure prophylaxis for occupational exposure to HIV.

*Source: WHO/AFRO. HIV/AIDS strategy for the WHO African Region, 2013 (1)*

The chapter focuses on HIV prevention among young people, key populations at higher risk of HIV infection, voluntary medical male circumcision and blood safety.

#### **4.2 Policies and programmes**

A review of the 2012 country Global AIDS Response Progress Reports (GARPR) shows that all countries in the WHO African Region have adopted a multisectoral approach for the national response to HIV/AIDS. The multisectoral approach is a policy programming strategy which engages all sectors, including the health sector, in a holistic response to the HIV/AIDS epidemic. All key stakeholders, including all relevant sector ministries, the private sector, NGOs, Faith Based Groups, community groups, professional and non-professional associations, academic and research institutions, bilateral and multilateral agencies are involved in the multisectoral response. To facilitate this approach, all countries have developed National Strategic Plans for HIV/AIDS.

Health sector interventions in most of the National Strategic Plans include strategies related to combination HIV prevention which involves implementing multiple

(biomedical, behavioural and structural prevention) interventions. All countries in the WHO African Region have adopted HIV prevention policies related to PMTCT, condom promotion, HIV testing and counselling, voluntary medical male circumcision, blood safety, management of STIs, adherence to universal precautions, promotion of medical infection control, and promotion of access to post exposure prophylaxis. A review of the 2012 country GARPR reports showed that the extent of implementation of these policies varied considerably between countries.

#### **4.3 HIV prevention among young people**

Young people aged 15-24 years are vulnerable to HIV; they are at an age when they are more likely to experiment with sexual activity and engage in high risk sexual behaviours and experiment with drugs (3). This continues to draw the attention of countries and the international community to the need to focus on young people.

In general, there have been modest positive changes in sexual behaviour, including delay in sexual debut and increasing condom use in premarital and

multiple sexual relationships. However, the level of comprehensive knowledge of HIV remains relatively low and condoms are not always used in higher risk sex and premarital sex. An analysis of data on sexual behaviours from recent DHS/AIS surveys conducted in the region between 2008 and 2012 found an increasing trend of young people aged 15-24 years in Ethiopia, Rwanda, the United Republic of Tanzania and Zimbabwe reporting having multiple sexual relations in the last 12 months, and a declining trend in condom use at last higher risk sex in Uganda and Ghana.

WHO recommendations for health-sector HIV prevention programmes for young people aged 15-24 years include contributing to acquiring correct and comprehensive knowledge of HIV, promotion of safer sexual behaviours including promoting condom use for sexually active young people, preventing sexually transmitted infections, male circumcision, HIV testing and counselling, providing youth friendly sexual and reproductive health services and linking HIV programmes to other relevant health related programmes (5)

A review of the 2012 country GARPR reports showed that all countries in the WHO African Region have HIV prevention programmes that target young people. In general, HIV prevention programmes targeting young people in the region focus on both school and out of school youth. Some of the strategies and activities that have been implemented include integration of HIV/AIDS education

in school curriculum from primary school level, anti HIV/AIDS awareness talks and campaigns, use of drama, role plays, audio-visual materials, debates, essay writing, poems, songs, and plays, electronic and print media messages, life skills training, peer education and condom promotion and distribution to young people who are sexually active. In addition, some countries engage out of school youth in income generating activities. Despite these efforts, no countries are making any efforts to target young people who are engaging in sex work, injecting drugs and who have sex with men.

#### **4.4 HIV prevention among key populations**

Key populations at higher risk of HIV infection are populations that have an increased probability of getting infected with HIV. Countries in the region are beginning to recognize that key populations have special needs. For example, the South Africa National Strategic Plan 2012-2016 specifically states that health care providers need to be responsive to the needs of sex workers (6).

##### **4.4.1 Sex workers**

Sex workers are among the key populations most affected by the HIV epidemic. The lifetime probability of a sex worker becoming infected with HIV is higher than among people in the general population due to multiple risk factors including having multiple sexual partners, unsafe working conditions, barriers to

negotiating consistent condom use, lack of access to appropriate lubricants, high prevalence of STIs and at times sharing of drug injecting equipment (7). A sex worker is 13.5 times more likely to acquire HIV than all other women aged 15-49 years (8). Sex work covers a broad range of transactions and thus sex workers are not a homogeneous group. Women, men, young and old are involved. Sex work entails exchange of money or goods for sexual services, either regularly or occasionally involving female, male and transgender adults and young children (9)

The WHO guidelines for sex workers *“Prevention and treatment of HIV and other STIs for sex workers in low and middle income countries: recommendations for a public health approach”* (7) recommend the following: making health services available, accessible and acceptable to sex workers based on the principles of avoiding stigma, discrimination and the right of sex workers to health; promotion of correct and consistent use of condoms among sex workers and their clients; periodic screening for STIs; and offering HIV testing and counselling, among others.

With the exception of Senegal where sex work is legally recognized, persistent criminalization of sex work across Africa reduces the sex workers' control over

their working conditions, impedes their access to health services and also obstructs health service provision and legal protection (9).

A systematic review of studies conducted among sex workers between January 2000 and June 2011 that reported having interventions for reducing HIV transmission among sex workers concluded that there was “virtually no country in the WHO African Region providing interventions for sex workers on adequate scale and intensity”(10).

A review of the 2012 country GARPR reports found that 40% of the countries in the WHO African Region, mainly from western Africa (Algeria, Angola, Benin, Cape Verde, Burkina Faso, Chad, Cote d'Ivoire, Ghana, Guinea, Mauritania, Niger, Nigeria, Senegal and Togo) and in Central Africa (Cameroon, Democratic Republic of Congo and Angola) and in southern Africa (Madagascar and Mauritius) the percentage of sex workers reached by HIV interventions in the past 12 months. Analyses of trends showed that the numbers of sex workers reached with HIV interventions in selected countries in the region varied over time and that in general there was no consistent trend (Table 4.1). In Benin, the proportion of sex workers reached with HIV prevention programmes increased from 56% in 2009 to 91% in 2012.

**Table 4.1: Number and proportions (%) of sex workers reached by HIV prevention programmes in selected countries, WHO African Region, 2009 and 2012**

Country	2009			2012		
	Number of respondents who replied yes to both questions	Total number of respondents surveyed	% of sex workers reached with HIV prevention programmes	Number of respondents who replied yes to both questions	Total number of respondents surveyed	% of sex workers reached with HIV prevention programmes
Angola	430	1,848	23			
Benin	592	1,050	56	639	704	91
Burkina Faso						
Burundi						
Chad	201	1,171	17			
Comoros					127	87
Côte d'Ivoire						
DRC				726	2,378	31
Gabon	208	601	35	326	368	89
Ghana	16,742	34,990	48			
Guinea	90	101	89	614	1,054	58
Madagascar						
Mauritania						
Nigeria						
Swaziland	143	143	100			
Togo						
United Republic of Tanzania	237	349	68			
Niger				411	765	54
Mauritius				322	400	81
South Africa				681	1,136	60

Sources: GARPR country reports 2010 and 2012

On the whole, HIV interventions offered to sex workers have mainly been associated with research studies or projects. Available evidence in the region demonstrates the effectiveness of: peer mediated condom promotion, risk reduction counselling and skills building for safer sex, screening for STIs and syndromic management of STIs among sex workers (10).

#### 4.4.2 Men who have sex with men (MSM)

Recent data on HIV prevalence among MSM and modes of transmission (MOT) analyses conducted in the region demonstrate that MSM are an important component of national HIV epidemics (4). Sex between men is heavily stigmatized and is a criminal offence in most of the countries in the region. Only three

countries (South Africa, Madagascar and Rwanda) have no criminal laws against sex between men. Due to these structural and legal barriers, the HIV epidemic among MSM continues to go largely unaddressed in many countries. HIV interventions and services targeting MSM are lacking in the National Strategic Plans (NSP) of most countries. Only eight countries (Mauritius, Madagascar, Cameroon, Cote d'Ivoire, Seychelles, Senegal, Togo and Nigeria) reported having interventions that reached MSM in 2011 (11).

An online global survey involving 165 countries was conducted between April and August 2012 among MSM with 7% of the respondents from sub Saharan Africa (12). The survey also involved Focus

Group Discussions (FGDs) with MSM that were conducted only in the region at the request from of the networks of MSM in the region. Three countries; South Africa (Johannesburg), Nigeria (Abuja) and Kenya (Nairobi) participated.

The survey found that, on the whole, less than one third of MSM had access to condoms and HIV testing and counselling. Only 21% and 42% of the surveyed MSM had access to lubricants and antiretroviral therapy respectively (13). Data on condom use and access to lubricants and antiretroviral therapy were not disaggregated by region. Selected findings from the FGDs highlight some of the barriers that hinder MSM from accessing HIV interventions and services as shown in Box 4.2.

**Box 4.2: Selected findings from the FGDs with MSM (conducted in South Africa, Nigeria and Kenya)**

*In South Africa we do not have laws that criminalize gay/MSM but this does not mean that the legal system has a mechanism for protecting gay/MSM from hate crimes and violence”*

*“Same sex sexual activity among men has been legal in South Africa since 1998, and is illegal in Kenya (penalty up to 14 years imprisonment) and in Nigeria (penalty varies)*

*“The staff, doctors and other providers need lots of training around how to treat patients humanely. They should focus on health concerns, not to shame you for being MSM or trying to make you be straight”.*

*“I went to the hospital and the nurse pulled out a bible to lecture me about being gay. She did not pay attention to my health”*

The survey identified three categories of factors impacting access to HIV services by MSM. These were structural, community/interpersonal and individual barriers. The structural barriers included policy, cultural and institutional issues,

including criminalization of homosexuality, sexual prejudice, homophobia in health facilities and poverty. These structural barriers were said to be creating an environment where blackmail, extortion, discrimination, violence against MSM

were allowed to exist. MSM were forced to hide their sexual behaviour from health care providers and other groups of people such as their families and employers to protect themselves and maintain a livelihood. Their inability to reveal their sexual behaviours to health providers more often than not led to misdiagnosis, delayed diagnosis and delayed treatment. The survey also indicated that community/ interpersonal and personal barriers undermined their relationships and trust of others hence increasing their vulnerability to HIV and making them fear to access health interventions including HIV prevention, care and support services.

#### 4.4.3 People who Inject Drugs (PWID)

The HIV epidemic among people who inject drugs (PWID) is an emerging and growing phenomenon in the WHO African Region. HIV transmission through sharing contaminated injection equipment is a much more efficient mode of transmission, unlike sexual transmission that may remain invisible for several years. HIV prevalence among PWID may rise from zero to 50-60% within two years, as has happened in some cities outside Africa (3). Depending on the sexual behaviours of PWID, the epidemic among PWID has a potential to spread very fast to the general population because of sexual mixing patterns. This is likely to be the case in Mauritius where injecting drug use is the main mode of HIV transmission, and in recent years the HIV prevalence among ANC attendees has steadily increased.

The HIV/AIDS response among PWID is relatively poor and almost non-existent in most countries in the WHO African Region. Only 9 out of the 47 countries in the WHO African Region reported on the proportion of HIV interventions and services reaching PWID in the period 2010 to 2012 (12). Only three countries (Mauritius, Kenya and Nigeria) have policies related to PWID in their National Strategic Plans. A systematic review of coverage conducted from October 2008 to February 2009 indicated that sub Saharan Africa had the lowest rate of needle-syringe distribution of 0.1 needle-syringe per PWID per year (13). Whereas the HIV prevention services remain extremely limited in most countries, in the few countries with services these are not tailored to the specific needs of PWID (3).

In 2009 and 2010, only one country (Mauritius) in the region reported having syringe and needle exchange programmes and two other countries including Mauritius reported having opioid substitution programmes. Four other African countries reported implementing other drug dependence programmes (14). Although injecting drug use remains illegal in Kenya, in 2011 the National AIDS Control Programme announced a plan to provide free HIV prevention and treatment for PWID. The plan also included needle exchange, psychosocial support and opioid substitution programmes. Twelve Primary Health Care facilities in Mombasa began offering opioid substitution, and piloting of needle exchange programmes were initiated in two public hospitals (15).

#### 4.5 Voluntary medical male circumcision (VMMC)

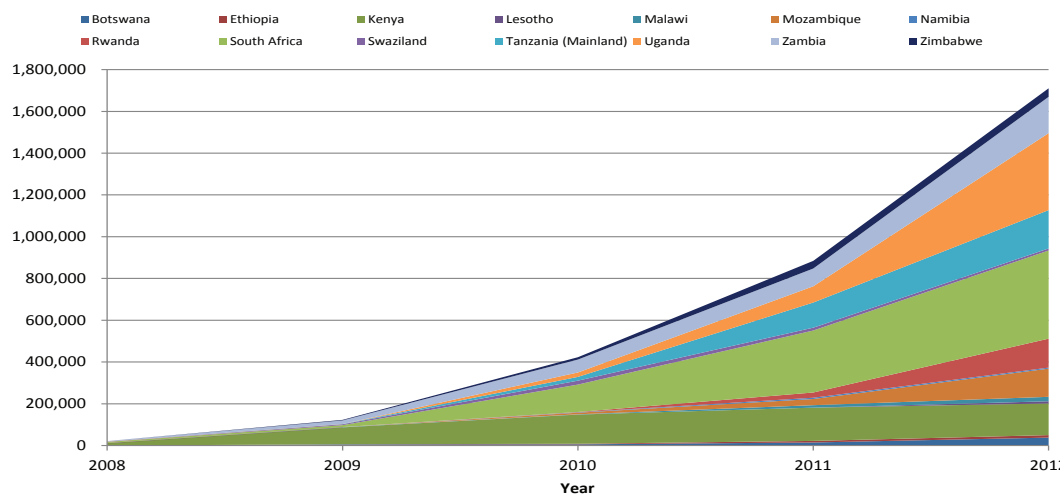
Male circumcision is an effective HIV prevention intervention that reduces heterosexual transmission among non-infected men (16). There is increasing evidence that female partners of circumcised HIV negative men have a lower prevalence of human papilloma virus than the female partners of uncircumcised men, a pattern that may lead to reduction of cervical cancer among partners of circumcised male partners, and also incidence of penile cancer among circumcised men (14)

Since 2007, 14 priority countries in eastern and southern Africa meeting the WHO/UNAIDS criteria of high HIV prevalence and low prevalence of male circumcision have been supported by WHO and its partners to initiate and scale up services for medical male circumcision. These countries are: Ethiopia (Gambella Region), Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Uganda, United Republic of Tanzania, Zambia and Zimbabwe (17). Impact and costing estimates suggest that scaling up VMMC to reach 80% coverage among men aged 15-49 years in the 14 priority

countries would entail performing 20.3 million circumcisions by 2015 and would avert 22% of new infections through 2025 (18).

As a result of strong leadership, commitment and good planning, considerable progress has been made in the 14 priority countries. All the 14 priority countries had developed target driven multi-year plans on VMMC by the end of 2012. The countries are aiming at performing about 20.3 million MC procedures by the end 2015 (Table 4.2). As of December 2012, a cumulative total of 3,162,036 VMMCs procedures had been performed in the 14 countries. This represented 15.1% of the estimated male circumcisions that would be needed among men aged 15-49 years in the priority countries to achieve 80% prevalence. The number of VMMCs performed in the priority countries in 2012 (1,710,531) represented a 1.9-fold increase over the number performed in 2011 (884,283) (Figure 4.1). Between 2010 and 2012, there was a 300% increase in the number of MCs performed in the 14 priority countries (17). Approximately 90% of the total MCs performed in 2012, were among males aged over 10 years, and of these 85% were aged 15 years and above (17).

**Figure 4.1: Annual number of voluntary medical male circumcisions in the 14 priority countries, WHO African Region, 2008-2012**



Source : WHO/AFRO Progress in Scaling up Voluntary Medical Male Circumcision for HIV Prevention in East and Southern Africa: January – December 2012 – Draft Report

**Table 4.2: Numbers of voluntary medical male circumcisions (VMMCs) performed and % achievement towards estimated number of MCs to reach 80% by year in the 14 priority countries, WHO African Region, 2008-2012**

Country	Estimated number of MCs needed to reach 80% prevalence	Potential infections averted by scaling up MC to reach 80% prevalence in five years	Number of MCs performed among all ages, by year and total						% Achievement towards estimate number of MCs to reach 80% prevalence
			2008	2009	2010	2011	2012	Total	
Botswana	345,244	62,773	0	5,424	5,773	14,661	38,005	63,863	18.50%
Ethiopia	40,000	1,479	0	769	2,689	7,542	11,961	22,961	57.40%
Kenya*	860000	73,420	11,663	80,719	139,905	159,196	151,517	543,000	63.10%
Lesotho**	376,795	106,427	No data	No data	No data	No data	10,521	10,521	2.80%
Malawi	2,101,566	240,685	589	1,234	1,296	11,881	21,250	36,250	1.70%
Mozambique	1,059,104	215,861	0	100	7,633	29,592	135,000	172,325	16.30%
Namibia	330,218	18,373	0	224	1,763	6,123	4,863	12,973	3.90%
Rwanda	1,746,052	56,840	0	0	1,694	25,000	138,711	165,405	9.50%
South Africa	4,333,134	1,083,869	5,190	9,168	131,117	296,726	422,009	864,210	19.90%
Swaziland	183,450	56,810	1,110	4,336	18,869	13,791	9,977	48,083	26.20%
Tanzania	1,373,271	202,900	0	1,033	18,026	120,261	183,480	322,800	23.50%
Uganda	4,245,184	339,524	0	0	21,072	77,756	368,490	467,318	11.00%
Zambia	1,949,292	339,632	2,758	17,180	61,911	85,151	173,992	340,992	17.50%
Zimbabwe	1,912,595	565,751	0	2,801	11,176	36,603	40,755	91,335	4.80%
<b>Total</b>	<b>20,855,905</b>	<b>3,364,344</b>	<b>21,310</b>	<b>122,988</b>	<b>422,924</b>	<b>884,283</b>	<b>1,710,531</b>	<b>3,162,036</b>	<b>15.20%</b>

Source: Ministries of Health in the 14 priority countries

\* Kenya's estimate is based on the national goal of 94% coverage for males aged 15 to 49 years

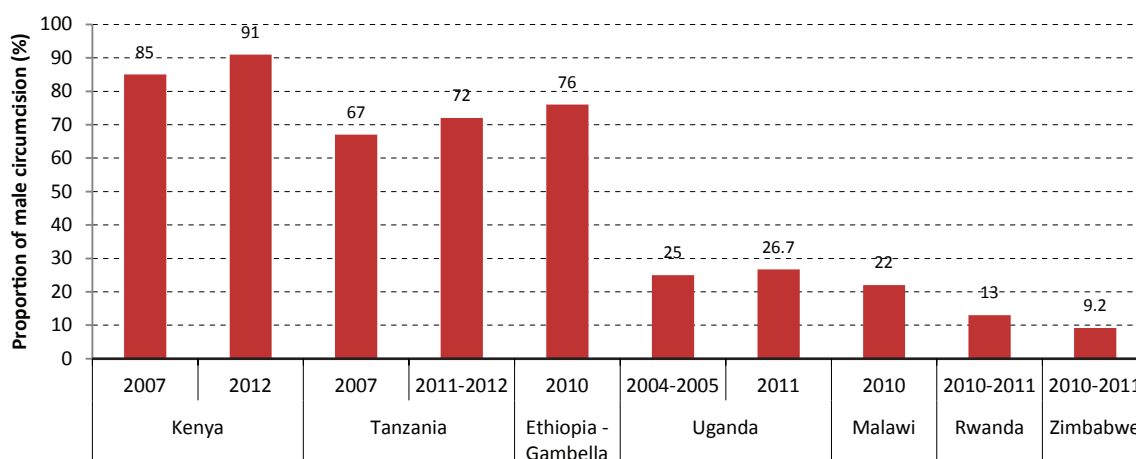
\*\*2008-2011 data for Lesotho not available



Population based data corroborate the findings of increased prevalence of male circumcision in the priority countries that have conducted two population based surveys between 2007 and 2012. The increase in Uganda was small (19) (Figure 4.2). In Kenya, the proportion of men reporting being circumcised increased from 85% in 2007 to 91% in 2012 (20) while in the United Republic of Tanzania the increase was from 67% in 2007/2008 to 72% in 2011-2012. In

the urban areas of mainland Tanzania, the rate of circumcision was 94% and that in the rural areas was 64% in the same period (21). In Rwanda, 13% of the men aged 15-59 years reported in the 2010 DHS that there were circumcised with the highest rates being in urban areas, in those educated to secondary level and above and among the wealthy. Prevalence rates of male circumcision were 32% and 10% in the urban and rural areas respectively in 2010 (22).

**Table 4.2: Numbers of voluntary medical male circumcisions (VMMCs) performed and % achievement towards estimated number of MCs to reach 80% by year in the 14 priority countries, WHO African Region, 2008-2012**



Source: Country DHS/AIDS reports in selected countries

Countries are utilising several innovative ways to scale up male circumcision. These include the use of champions (as role models and mentors), involvement of other ministries and programmes, school campaigns, home to home awareness campaigns, national or sub-national mass

mobilization/campaigns such as in Lesotho (Box 4.3), engaging elders and influential people such as parliamentarians in the launch of VMMC documents, programmes and sites (17), task shifting in Zimbabwe (Box 4.4) and providing 'user friendly' clinics as in Lesotho (Box 4.3).

### Box 4. 3: Intensive mass male circumcision in Lesotho

A voluntary male circumcision policy and operational plan were developed and completed in 2011/2012. In February 2012, male circumcision commenced at 4 hospitals in the country. Between 25 June 2013 to 13 July 2013, Lesotho embarked on an intensive mass circumcision programme with phase 1 starting at Scott Hospital on pilot basis, with 40 men being circumcised every day. Before this, male circumcision procedures were only carried out in the hospitals twice a week. This intensive phase coincided with the winter school break to allow male youth to be free to come for the services. As the clients came in, they received group education and counselling followed by one to one counselling after which they were offered HIV testing and counselling, and then informed consent obtained for male circumcision. More than 1,715 men were tested and 1,114 were circumcised

Source: <http://www.afro.who.int/en/lesotho/press-materials/item/4874-ministry-of-health-commences-voluntary-male-medical-circumcision-services-scalingup-totackle-HIV-epidemic-in-lesotho> (23)

#### Adult VMMC in Lesotho

Lesotho established a VMMC clinic that caters for men over 29 years of age so as to improve uptake among 'older men'. Lesotho decided to create a specialized clinic when experience showed that these 'older men' were uncomfortable receiving VMMC services with boys and young men. Men over 29 years of age receive the same package of VMMC services as other programme recipients but are now able to do so in a more consumer friendly environment. Following the creation of the clinic, an improvement was reported in the number of 'older men' presenting for VMMC. The country plans to consider replicating this approach in other parts of the country where older men are not presenting for VMMC in sufficient numbers

Source: WHO/AFRO. *Progress in scaling up voluntary medical male circumcisions for HIV prevention in East and Southern Africa: January-December 2012- Draft Report* (17)

### Box 4.4: Broadening the scope of practice for nurses and midwives in Zimbabwe

In order to support accelerated scale up of VMMC services, Zimbabwe developed the "Broadening the scope of practice for nurses and midwives" policy. Through a consultative process with the Health Professions Authority, the Zimbabwe Councils of Nurses and of Medical and Dental Practitioners explored the feasibility of allowing nurses to conduct medical male circumcisions. It was determined that 'The Health Professions Council Act Chapter 27: 19 Part VII clauses 1a) and e) had sufficient provisions for the

nurses and midwives to shoulder added responsibilities, including VMMC. Under the agreed new approach, the Nurses Council is now able to authorize appropriately trained and mentored nurses and midwives to take on added responsibilities that include surgical VMMC procedures and provision of VMMC services using MC devices.

Source: WHO/AFRO. *Progress in scaling up Voluntary medical male circumcision for HIV prevention in East and Southern Africa: January-December 2012-Draft Report* (17)

## 4.6 Blood safety

The key areas for action by countries to ensure blood safety as articulated in the WHO Strategic Plan 2008-2015 on blood safety are as follows: establishment of well organised nationally coordinated blood transfusion services to ensure timely availability of safe blood and blood products for all requiring transfusion; collection of blood from voluntary unpaid blood donors from low risk populations; quality assured testing for transfusion transmissible infections, blood grouping and compatibility; safe and appropriate use of blood; a reduction of unnecessary transfusions; and establishment of quality systems covering the entire transfusion process from donor recruitment to follow-up of the recipients of transfusion.

In line with this WHO has supported countries to develop national blood transfusion services through its Blood Safety Programme by providing policy guidance and technical assistance (24). By the end of 2012, forty three countries in the WHO African Region had adopted national safety blood policies (25).

In 2009, forty countries in the WHO African Region reported testing 100% of blood for HIV before transfusion and the remaining 6 countries test at least 98% (5). In 2011, forty three countries in the WHO African Region reported collecting 4 million units of blood but this accounted for 4.3% of total donations although African countries account for 12% of the global population (26). This was an increase from 1.95 million in 2000 and approximately 3.5 million in

2009 (5). Only 45% of the demand for blood transfusions in Africa is currently being met (25).

The accepted minimum rate of blood donations to meet a country's most basic requirements for whole blood donations per 1000 population is estimated to be 10 units per 1000 population. In 2011, about 82 countries worldwide reported collecting fewer than 10 donations per 1000 population. Thirty-nine of these countries were in WHO African Region (26). More than 80% of blood donations in 21 countries were from voluntary and non-numerated donors in 2011, a slight increase from 20 countries in 2009 (5,26). HIV testing has significantly improved with all countries reporting 100% of their blood supply tested for HIV, from 40 countries in 2009 (5,25). Twenty seven (27) countries have a national external quality assessment for transfusion transmitted infections and guidelines on the appropriate clinical use of blood have been developed in 29 countries as of November 2013 (25)

## 4.7 Challenges and the way forward

In general, scaling up of HIV prevention interventions and services in the past decade in the WHO African Region is beginning to bear fruits. The decline in new HIV infections in the region is largely attributed to reduction in sexual risk behaviours mainly among young people. Steadily but slowly young people are adopting safer sexual behaviours and their level of comprehensive knowledge of HIV is increasing.

However, the level of comprehensive knowledge of HIV remains relatively low. Early sexual debut, multiple sexual partners and premarital sex are common and condoms are not always used during higher risk sex and premarital sex. This calls for intensified efforts in engaging young people in the HIV/AIDS response; Young people should be equipped with skills to make responsible and informed decisions about their sexuality and reproductive health, HIV and gender inequalities. There is need to conduct further research to better understand and address issues related to difficulties in implementation, gender differences in the response to HIV interventions, the determinants of exposure to HIV, and other factors which influence sexual behaviour among young people.

New strategies are emerging that may have a potential to reduce the vulnerability of young people to HIV such as social cash transfer that creates an incentive for adopting safer sexual behaviours. A randomized controlled study among young people aged 18-32 years in 29 rural and periurban villages in 5 districts in Lesotho involving short term financial incentives reduced the probability of acquiring HIV infection by 25% over a period of two years (27). Another study in Zomba, Malawi involving conditional cash transfers to adolescents and their households for schooling reduced new HIV infections by 64% and the incidence of Herpes simplex type 2 (0.7% in the arm that received cash transfers and 3.0% in the control arm) (28). These emerging innovative approaches need to

be paired with other HIV interventions among young people. Countries will have to assess the feasibility of these structural interventions.

While the pace of scaling up access to VMMC services is increasing in almost all the 14 priority countries, a number of challenges remain. These include inadequate human and financial resources, inadequate supplies, delayed procurement and weak supply chain management (stock outs of MC kits, equipment and other supplies), low demand for VMMC services more so among 25-49 year old men and minimal domestic investment for VMMC activities. VMMC activities largely remain funded by development partners. Monitoring and reporting systems for VMMC services remain parallel to the national health management information system (HMIS) in the majority of the countries and is heavily reliant on partners for reporting. Socio-cultural factors especially in countries where circumcision has not been traditionally a practice are a challenge to the uptake of VMMC services among adult males.

There is need for countries to sustain and improve on the achievements made in improving access to VMMC services. Intensified efforts to increase the level of awareness of the public health and individual health benefits of VMMC, to enhance demand creation through innovative advocacy and communication approaches, to increase funding for the VMMC activities through diversifying funding from both domestic and partner

sources, and review regulations to allow health providers other than medical doctors (task shifting) to perform MC in the light of the availability of relatively safe, non-surgical devices such as Prepex are required. To promote sustainability, countries should consider integrating early infant male circumcision into Mother, Neonatal and Child Health (MNCH) programmes.

HIV prevention services targeting key populations remain inadequate. Structural and legal barriers make it difficult for key populations to access HIV prevention, treatment, care and support services. These barriers need to be identified and addressed in the national HIV response. A review of the laws and regulations that criminalise key populations needs to be done to reach a balance between public order and public health. Key populations should be actively engaged in the national HIV/AIDS response starting from the design of interventions that meet their specific needs to implementation, monitoring and evaluation of the interventions.

A multi-level approach involving a combination of interventions and methods is needed in the HIV/AIDS response among PWID. Provision of sterile needles and syringes (typically through needle and syringe programmes to avoid HIV transmission through sharing of

contaminated equipment), treatment of opioid dependence with opioid substitution therapy (leading to reduction in drug injection), promotion of safer sexual behaviours including promotion and use of condoms (reduction in HIV risk sexual behaviour), treatment of PWID who are infected with antiretroviral therapy, targeted information, education and communication on HIV/AIDS education, screening and treatment for TB, diagnosis and treatment of Hepatitis C would result in desirable health outcomes and decrease the spread of HIV among this population (3,13).

While progress has been made with regards to blood safety, only 45% of the blood requirements are being met in the WHO African Region. A shortage of voluntary blood donors, low donation rates, irregular supply of kits, stock outs of test kits for transfusion transmissible infections (TTIs) are common challenges in the region. Countries will need to increase investment in blood transfusion services, design and implement attractive and innovative strategies to attract potential donors so as to increase blood donation rates and increase retention of voluntary donors. Improvement of logistics and supply management systems to minimize the occurrence of stock outs of kits and other supplies will also be required.

# REFERENCES

1. WHO/AFRO. *HIV/AIDS: Strategy for the WHO African Region*. 2013. WHO/AFRO, Brazzaville.
2. WHO. *WHO Global Health Sector Strategy on HIV/AIDS 2011-2015*. 2011. WHO, Geneva.
3. WHO/UNAIDS/UNODC. *Advocacy guide: HIV/AIDS prevention among injecting drug users*. 2004 WHO Geneva.
4. UNAIDS. *Global Report on the global AIDS epidemic 2013*. 2013 UNAIDS, Geneva.
5. WHO/AFRO. *HIV in the WHO African Region Progress towards achieving universal access to priority health sector interventions 2011 update*. 2011. WHO/AFRO, Brazzaville.
6. Republic of South Africa. *National Strategic Plan on HIV, STIs and TB 2012-2016*. 2011. <http://www.doh.gov.za/docs/stratdocs/2012/NSPfull.pdf>, accessed 18 September 2013
7. WHO/UNFPA/UNAIDS/NSWP. *Prevention and treatment of HIV and other sexually transmitted infections for sex workers in low-and middle-income countries Recommendations for a Public Health approach December*. 2012; WHO Geneva.
8. Morrison L., Weiss H., Buve A., et al. *Commercial sex and the spread of HIV in four cities in Sub Saharan Africa*. 2001 AIDS Suppl 4:56-9
9. UNFPA. *HIV/AIDS, Gender and sex work*. [http://www.unfpa.org/hiv/docs/factsheets\\_genderwork.pdf](http://www.unfpa.org/hiv/docs/factsheets_genderwork.pdf), accessed 14 September 2013
10. Chersich Matthew, Stanley Luchters, Innocent Ntaganira, et al. *Priority interventions to reduce HIV transmission in sex work settings in Sub Saharan Africa and delivery of these services*. 2013. Journal Int AIDS Soc 16(1) 17980, doi:10:7448/IAS. 16.1
11. *Country GARPR Progress reports*. <http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries>, accessed 12 September, 2013
12. Sonya Arreola, Pato Hebert. Keletso Makofane., et al. *Access to HIV prevention and treatment for men who have sex with men Findings from the 2012 Global Mens' Health and Rights study (GMHR)*. December 2012. The Global Forum on MSM and HIV (MSMGF), Oaklands, USA
13. Bradley M. Mathers, Degenhardt L., Hammadi Ali., et al. *HIV prevention, treatment and care services for people who inject drugs: a systematic review of global, regional and national coverage*. [www.thelancet.com/journals/lancet/article/PII0140-6736\(10\)60232-2/abstract#cor1](http://www.thelancet.com/journals/lancet/article/PII0140-6736(10)60232-2/abstract#cor1)
14. WHO/UNAIDS and UNICEF. *Global HIV/AIDS Response epidemic update and health sector progress towards Universal Access progress report 2011*. WHO, Geneva. 2011.
15. UNAIDS. *Kenya to adopt comprehensive HIV package for people who inject drugs*. 23 February 2011. <http://www.unaids.org/en/targetsandcommitments/preventinghivamongdrugusers/morefeaturesstories/2/>, accessed 24 September 2013
16. Auvert, B., Taljaard, D., Largarde, E., et al. *Randomised controlled intervention trial of male circumcision for reduction of HIV risk: The ANRS 1265 Trial*. PLoS Med 2(11): e298.doi.10.1371/journal.pmed.0020298
17. WHO/AFRO. *Progress in scaling up voluntary medical male circumcision for HIV prevention in East and Southern Africa January –December 2012*. July 2013 (Draft). WHO/AFRO, Brazzaville
18. WHO/UNAIDS. *Joint strategic action framework to accelerate the scale up of voluntary medical male circumcision for HIV prevention in eastern and southern Africa 2012-2016*. November 2011. UNAIDS, Geneva. JC2251E
19. *Uganda AIDS Indicator Survey (AIS) 2011*. August 2012. Ministry of Health Uganda, ICF Calverton Maryland USA, Centre for Disease Control and Prevention, Entebbe, Uganda, US Agency for International Development, Kampala, Uganda, WHO Uganda, Kampala.

20. National AIDS and STI Control Programme, Ministry of Health, Kenya. *Kenya AIDS Indicator Survey 2012: Preliminary Report*. September 2013. Nairobi, Kenya
21. Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC), National Bureau of Statistics (NBS), Office of the Chief Government Statistician (OCGS), and ICF International. *Tanzania HIV/AIDS and Malaria Indicator survey 2011-2012*. 2013. Dar es Salaam, Tanzania:TACAIDS, ZAC,NBS, OCGS, and ICF International.
22. National Institute of Statistics of Rwanda (NISR) (Rwanda), Ministry of Health (MOH) (Rwanda), and ICF International. *Rwanda Demographic and Health Survey 2010*. Calverton, Maryland, USA:NISR, MOH, and ICF International
23. <http://www.afro.who.int/en/lesotho/press-materials/item/4874-ministry-ofhealth-commences-voluntary-male-medical-circumcision-services-scalingup-totackle-HIV-epidemic-in-lesotho>
24. WHO. WHO Universal Access to safe blood transfusion scaling up the implementation of the WHO strategy for blood safety and availability for improving patient health and saving lives. <http://www.who.int/bloodsafety/StrategicPlan2008-2015AccessSafeBloodTransfusion.pdf>, accessed 4 Oct 2013
25. WHO/AFRO database on blood safety, November 2013
26. WHO. WHO Global blood safety summary report 2011. [www.who.int/bloodsafety/global\\_database/GDBS\\_summary\\_report\\_2011.pdf](http://www.who.int/bloodsafety/global_database/GDBS_summary_report_2011.pdf), accessed 19 September,2013
27. Bjorkman-Nyqvist M.,Corno, L., de Walque D., and Svensson, J. *Evaluating the impact of short term financial incentives on HIV and STI incidence among youth in Lesotho. A randomized trial' Abstract for a poster discussion session TUPDCO106, IAS 7th International Conference on HIV pathogenesis, treatment and prevention*. Kualu Lumpur, Malaysia July 2013
28. Lori Heise, Brian Lutz, Meghna Ranganathan and Charlotte Watts. *Cash transfer for HIV prevention: considering their potential*. 2013. Journal of the International AIDS Society 16:18615

## 5. HIV PREVENTION AND TREATMENT AMONG WOMEN AND CHILDREN

### Key messages

- Considerable progress has been made towards the elimination of mother to child transmission of HIV in the WHO African Region since 2009 with the region experiencing an overall decline of 37% in the number of new HIV infections among children between 2009 and 2012.
- Coverage rates for HIV testing and counselling among pregnant women have increased from 38% in 2009 to 50% in 2012, an increase of 12% between 2009 and 2012.
- The uptake of ARV for PMTCT has improved substantially with 63% of pregnant women living with HIV in the region having received antiretroviral medicines for PMTCT in 2012.
- The coverage of antiretroviral therapy among HIV infected children is steadily improving, but remains low with only 33% receiving ARVs in 2012. Similarly, early diagnosis of HIV among exposed infants remains low.
- Big countries in the region such as the Democratic Republic of Congo, Ethiopia and Nigeria which contribute the highest numbers of pregnant women living with HIV have been facing challenges in providing PMTCT services and will need to step up their efforts.

### 5.1 Introduction

Following the 2011 UN Declaration on HIV/AIDS “Intensifying our efforts to eliminate new HIV infections by 2015”, a Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive was launched in July 2011 (1). The Global Plan includes 22 countries that account for 90% of all pregnant women living with HIV, with 21 of these countries being in the WHO African Region (Angola, Burundi, Botswana, Cameroon, Chad, Cote d’Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, Kenya,

Lesotho, Malawi, Mozambique, Namibia, Nigeria, Swaziland, South Africa, Uganda, United Republic of Tanzania, Zambia and Zimbabwe).

In 2012, the WHO Regional Office for Africa, in collaboration with partners, developed a “Strategic Framework for the Elimination of New HIV Infections Among Children in Africa by 2015” (2). The framework outlines the aim, objectives, targets and priority actions for eliminating new HIV and syphilis infections in children in the African Region by 2015 and



keeping their mothers alive. It provides countries in the region with a systematic approach for the elimination of mother to child transmission of HIV (eMTCT) based on country typology (epidemiology and response), and improvement of maternal and child health and survival in the

context of HIV/AIDS. Its main objectives and targets (Box 5.1) are in line with the Regional HIV/AIDS Strategy– “HIV/AIDS: Strategy for the WHO African Region” (3) and harmonized with those of the Global Plan.

**Box 5. 1: Strategic Framework for the elimination of new infections among children in Africa by 2015**

**Objectives and targets-:**

- Reduce the number of new HIV infections among children by 90% from the 2009 baseline.
- Reduce the number of AIDS-related maternal deaths by 50%.

**Proposed priority interventions for the eMTCT initiative are based on seven building blocks for accelerated actions**

- Ensure leadership and country ownership.

- Improve coverage, access and utilization of services.
- Strengthen quality of Mother Neonatal Child Health services to deliver effective PMTCT interventions.
- Enhance provision of linked services.
- Strengthen human resource capacity, supply chain management and information systems.
- Improve measurement of performance and impact.
- Develop and engage community systems.

A substantial decline in the number of new HIV infections among children after the commencement of prevention of mother to child transmission (PMTCT) programmes in the WHO African Region provides a ‘ray of hope’ and optimism that it is feasible to eliminate new infections among children and to improve the health of their mothers by 2015. In 2012, about 260,000 children were newly infected with HIV in low and middle income countries (4). At the global level, there was a decline of 35% in new infections among children between 2009 and 2012. (4) In the 21 Global Plan priority countries, mother to child transmission rates declined from an estimated 26% in 2009 to 17% in 2012 (1).

Countries such as Botswana and South Africa are achieving low HIV transmission rates similar to those seen in high income countries as a result of the high coverage of PMTCT services among pregnant women living with HIV (1)

This chapter tracks the progress made by countries in the WHO African Region in the prevention of HIV transmission from pregnant or breastfeeding women living with HIV to their infants and in the provision of appropriate treatment to mothers living with HIV and their children who have been exposed to HIV.

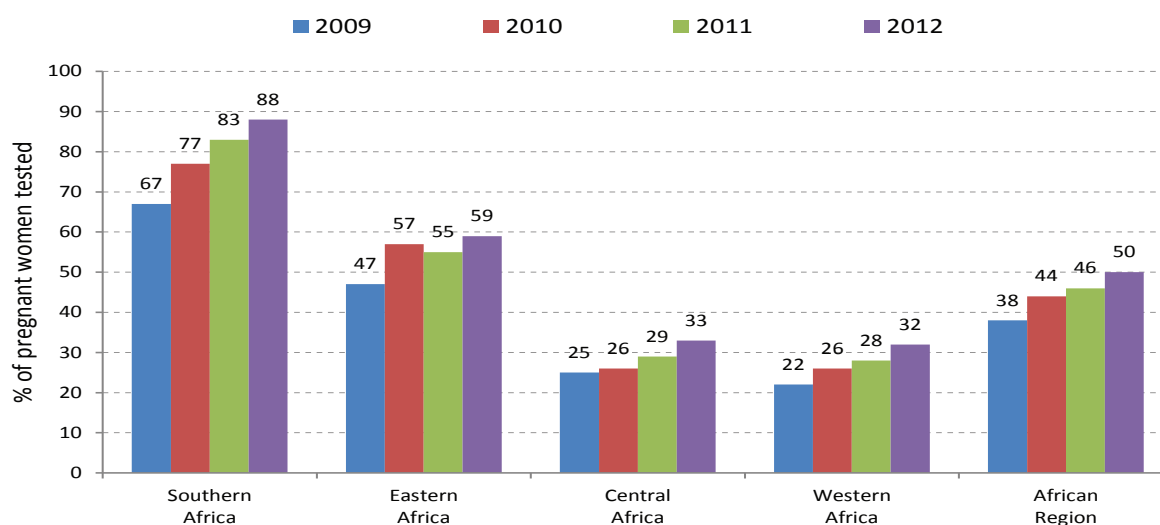
## 5.2 HIV testing and counselling among pregnant women

Timely HIV testing and counselling is critical to identifying pregnant women living with HIV who can benefit from interventions to reduce the risk of HIV transmission to their children; and for pregnant women living with HIV to receive timely treatment and care for their own health. The proportion of pregnant women who receive an HIV test in the past 12 months in Sub Saharan Africa has been steadily increasing over the years. Antenatal care offers a critical opportunity for pregnant women and their partners to receive HIV testing and counselling (HTC).

Over two thirds (67%) of pregnant women in sub-Saharan Africa attend antenatal care at least once during pregnancy (5).

Trends in the coverage of HIV and testing rates among ANC attendees continue to increase in all sub regions (Figure 5.1). This increase is largely due to the expansion and scale up of provider-initiated testing and counselling in antenatal clinics, maternal, neonatal and child health (MNCH) care settings. From a coverage rate of 8% in 2005, the region achieved almost a fivefold increase to 38% in 2009; and since then a slow but steady increase to 50% in 2012 (6).

**Figure 5.1: Estimated proportion (%) of pregnant women tested for HIV, WHO African Region, 2009-2012**



Source: The Numerator for the data was taken from the Indicator 3.4 Pregnant Women who know their HIV status of GARPR October 2013 update.

Some of the figures were imputed data from the previous year, if the respective country did not report to the GARPR in a given year. The Denominator was from the UN Population Division - the 2012 update.

HIV testing among antenatal clinic attendees varies greatly between countries and sub regions in the WHO African Region (Figure 5.1). Big increases in HIV testing rates were seen between 2009 and 2012 in southern Africa from a coverage of 67% to 88%, followed by eastern Africa from 47% to 59%, western Africa from 22% to 32%, and central Africa from 25% to 33%.

### 5.3 Providing antiretroviral medicine to pregnant women living with HIV for preventing mother to child transmission of HIV

Following the release of the 2010 WHO guidelines which recommended provision of lifelong antiretroviral therapy (ART) to all HIV-infected pregnant women eligible for such treatment and two short-term antiretroviral prophylaxis options (Option

A and Option B) for women not eligible for treatment for their own health, WHO/AFRO organized four dissemination meetings with countries in the region and supported them to revise/adapt their national PMTCT guidelines and to develop their country roll-out plans. Table 5.1 shows the different PMTCT options adopted by the priority countries as at June 2013.

**Table 5.1: Implementation of the 2010 WHO Guidelines among selected countries in the Africa Region, as at June 2013**

Country	PMTCT option after 2010 WHO ARV guidelines	PMTCT regimen as of June 2013	Implementation status of ART for all pregnant and breastfeeding women living with HIV (Option B or B+)
Angola	B	B+	Select regions
Benin	B+	B+	...
Botswana	B	B	National
Burundi	B	B	National
Cameroon	A	B+	Planned (being discussed)
Chad	B	B	National
CAR	A	B+	Adopted (but only in demonstration sites)
Cote d'Ivoire	B	B/B+	National
D R Congo	A	B+	Planned (being discussed)
Ethiopia	A	B+	Select regions
Ghana	A	B	National
Guinea	B	B	National
Guinea-Bissau	B	B	National
Kenya	A	A/B	Select regions
Lesotho	A	B+	National
Liberia	A	B+	Planned
Malawi	B+	B+	National
Mozambique	A	B+	Select regions
Namibia	A	B+	Planned
Niger	A/B	A/B	National
Nigeria	A/B	A/B	Select regions
Sierra Leone	A	A	National
Senegal	B+	B+	National
South Africa	A	B	National
Swaziland	A	A	Piloting B+ in select regions
Tanzania	A	B+	Planned
Uganda	A	B+	National
Zambia	A	B+	Planned

Source: Country quarterly progress reports

Notably, initially Malawi and later several other countries started putting all HIV positive pregnant and breastfeeding women on lifelong ARVs (option B+). This

has had a positive impact on PMTCT services, including integration with Mother Neonatal and Child Health (MNCH) and ART programmes (Box 5.2).

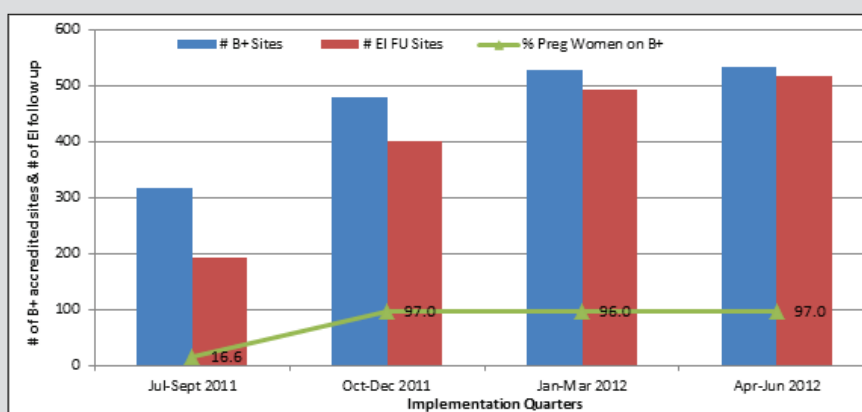
**Box 5.2: Implementation of B+: The Malawi experience**

Following the release of the WHO 2010 PMTCT Guidelines Malawi decided to initiate all HIV-positive pregnant or breastfeeding women on antiretroviral therapy (ART), irrespective of their CD4 cell count. This approach was called ‘B+’ and aimed to 1) increase access to ART for HIV-positive pregnant or breastfeeding women in a setting with limited access to CD4 testing, (2) maximize the mothers’ health and reduce post-partum mortality, (3) reduce HIV transmission to sexual partners especially in stable discordant relationships, (4) avoid starting and stopping prolonged ARV use, (5) reduce stigma brought about by curtailing

breastfeeding, (6) reduce malnutrition among infants and (7) avoid the need for extended infant HIV prophylaxis.

The implementation of Option B+ in Malawi has resulted in increased availability, access to and utilization of PMTCT services. This initiative has been associated with rapid expansion of integrated PMTCT/ART services to all Maternal Neonatal and Child Health (MNCH) sites. With offer of HIV testing and counseling (HTC) to all women accessing ANC and delivery care, over 80% of those testing positive are initiated on ART in the country.

**Changes in numbers of sites accredited for B+, exposed infant follow and the percentages of HIV positive pregnant women initiated on B+ during the first year of B+ implementation in Malawi (July 2011-June 2012)**



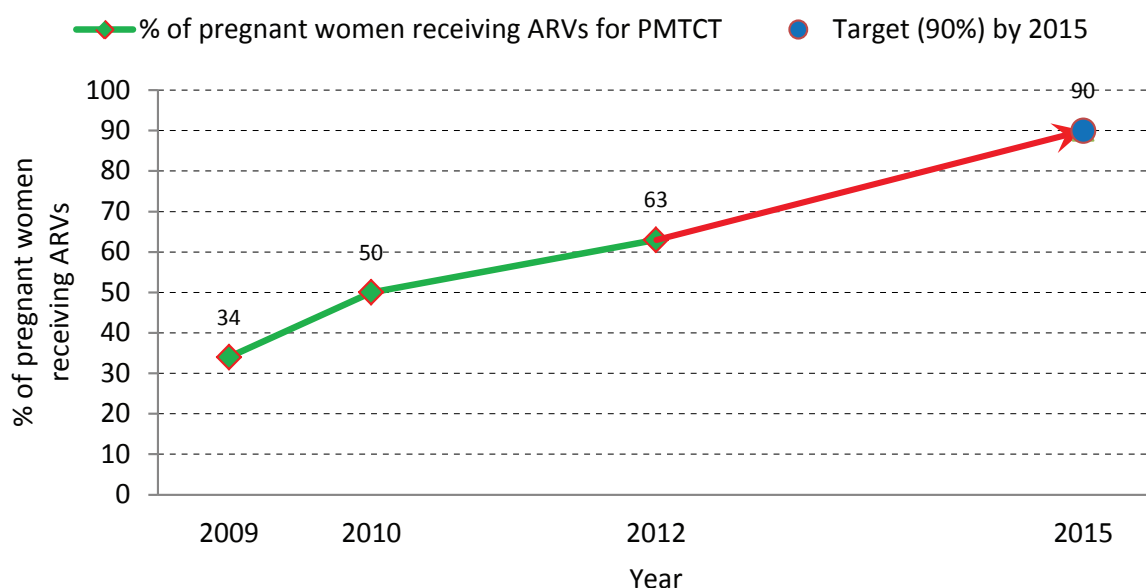
Source: Malawi Documentation Report, 2013

The high antenatal attendance rate of 95% in Malawi, (2010), availability of HTC in all ANC outlets, commitment to integrate ART and PMTCT services, maximization of use of existing human resources through integration of services and task shifting, supportive policy and guidelines for institutionalizing the programme and

its effectiveness make high ART coverage among HIV-positive women possible and Option B+ provides the opportunity of treating them. Available partnerships, involvement of PLHIV, increased male involvement and community engagement and support are also critical to this end.

As of December 2012, about 860,000 pregnant women living with HIV had received antiretroviral prophylaxis or treatment in the WHO African Region. As shown in Figure 5.2, the coverage of pregnant women living with HIV receiving antiretroviral medicines for the prevention of mother to child transmission (PMTCT) increased from 34% in 2009 to 63% in 2012 (7,8).

**Figure 5.2: Trends (%) in provision of effective ARVs for pregnant women for prevention of mother-to-child transmission, WHO African Region, 2009-2012**



Sources: WHO/UNICEF/UNAIDS Global HIV/AIDS Response epidemic update and health sector progress towards Universal Access Progress Reports (2009 and 2010)

UNAIDS database on HIV/AIDS 2013.

Progress in the coverage of ARVs for PMTCT has been different between countries and sub-regions (Figure 5.3). Progress has been more among countries in southern Africa. Twelve countries (Botswana, Ghana, Liberia, Mozambique, Namibia, Rwanda, Sierra Leone, South Africa, Swaziland, Togo, Zambia, Zimbabwe) have PMTCT ARV coverage rates of 80% or more with five of them (Botswana, Namibia, Zambia, Ghana and Sierra Leone) having reached the

2015 target in providing 90% or more of the pregnant women living with HIV antiretroviral medicines for preventing mother to child transmission (PMTCT) in 2012. Another 10 countries had moderate coverage of 50-79%. However, of concern are the 9 countries that have coverage rates of less than 50%, with five of them (Angola, Chad, Democratic Republic of Congo, Ethiopia and Nigeria) being eMTCT priority countries.

**Figure 5.3: PMTCT ARV coverage (%) for selected countries in WHO Africa Region, 2012**

High Coverage: (80 % and above)	Moderate coverage: (50-79%)	Low Coverage: (Less than 50%)
Botswana*	Burundi*	Angola*
Ghana*		
Liberia		
Mozambique*	Cameroon*	Benin
Namibia*	Central African Republic	Burkina Faso
Rwanda	Côte d'Ivoire*	Chad*
Sierra Leone	Gabon	Congo
South Africa*	Guinea Bissau	D R C*
Swaziland*	Kenya*	Eritrea
Togo	Lesotho*	Ethiopia*
Zambia*	Malawi*	Guinea
Zimbabwe*	Uganda*	Nigeria*
	Tanzania*	

\* Global Plan EMTCT Priority countries

Source: UNAIDS Global Report on AIDS epidemic 2013.

#### 5.4 Reduction in AIDS related maternal deaths

HIV remains an important cause of maternal deaths in the WHO African Region (9). Both the Global Plan and the regional strategic framework aim to reduce the number of AIDS related maternal deaths by 50% from 2009 to 2015. Empirical data on maternal deaths in general and those attributed to AIDS in particular are not readily available in several countries. Table 5.2 shows estimates of maternal deaths in the

region attributed to HIV/AIDS for the periods 1990-2008 and 1990-2010. In general, between 2008 and 2010, there were declines in AIDS related maternal deaths in several countries where data were available. These include Botswana, Swaziland, Zambia and Zimbabwe. During the same period there were increases in South Africa, Namibia, Gabon, Equatorial Guinea, Cote d'Ivoire, Uganda and United Republic of Tanzania.

**Table 5.2: Trends (%) in AIDS related maternal deaths in selected countries, WHO African Region, 2008 - 2010**

Country	% AIDS related maternal deaths (2008)	% AIDS related maternal deaths (2010)
Angola	...	5
Botswana	77.9	56
Burundi	...	7
Cameroon	14.2	10
Central African Republic	11.6	10.9
Chad	...	4
Congo	11.8	8.2
Cote d'Ivoire	15.2	17
Democratic Republic of Congo	....	4
Djibouti	14.9	--
Equatorial Guinea	12.6	21.8
Eritrea	6.6	---
Ethiopia	...	4
Gabon	26.1	25.8
Ghana	...	8
Kenya	13.9	20
Lesotho	...	42
Malawi	31.8	29
Mozambique	...	27
Namibia	50.1	59
Nigeria	...	8
Rwanda	5	3.5
South Africa	42.5	60
Swaziland	75.1	67
Uganda	24	25
United Republic of Tanzania	11.1	18
Zambia	37	31
Zimbabwe	52.7	39

Sources: WHO, UNICEF, UNFPA and World Bank. Trends in maternal mortality: 1990 to 2008. WHO 2010. WHO, UNICEF, UNFPA and World Bank. Trends in maternal mortality: 1990 to 2010. WHO 2012

## 5.5 Early Infant diagnosis of HIV

Virological testing of HIV exposed infants within two months of birth is critical to identifying those that might have been infected with the virus in utero and during delivery, and to ensuring that they are timely linked to treatment, care and support services. This has been shown to markedly improve their health outcomes by reducing morbidity and mortality rates given that 50% of untreated children infected with HIV during pregnancy and childbirth die before their second birthday untreated (10).

Analyses of trends on virological testing among infants within 2 months of birth in countries that reported data for the period 2009 to 2012 indicate that progress is being made slowly (Table 5.3). Only seven countries (Cape Verde, South Africa, Swaziland, Rwanda, Namibia, Zambia and Gabon) had 50% or more of the HIV exposed infants tested by 2 months of age. On the other hand six countries (Guinea, Chad, Democratic Republic of Congo, Sierra Leone, Malawi and Angola) were testing 10% or less of the HIV exposed infants by 2 months of age.

**Table 5.3: Proportion (%) of infants born to women living with HIV who had a virological test within two months in selected countries, WHO African Region, 2009-2012**

Subregion	Country	2009	2010	2011	2012
Southern Africa	Botswana	...	53	37	42
	Comoros	...	...	2	<1
	Lesotho	33	78	69	--
	Madagascar	...	...	0.1	<1
	Malawi	...	...	...	5
	Mauritius	...	...	...	21
	Mozambique	...	34	43	42
	Namibia	--	62	96	89
	South Africa	...	69	61	94
	Swaziland	...	54	77	90
	Zambia	53	21	57	68
Zimbabwe	...	14	20	38	
Eastern Africa	Ethiopia	4	...	11	22
	Kenya	...	64	39	44
	Rwanda	...	...	68	86
	Uganda	6	11	30	---
	United Republic of Tanzania	13	22	28	32
Central Africa	Angola	...	3	6	8
	Burundi	...	7	10	14
	Central Africa Republic	...	...	7	...
	Chad	...	2	1	4
	Congo	...	...	6	12
	Demo. Republic of Congo	...	2	4	7
	Gabon	...	...	37	54
Western Africa	Benin	...	...	14	15
	Burkina Faso	...	...	14	25
	Cameroon	26	21	29	41
	Cape Verde	...	...	>95	>95
	Cote d'Ivoire	...	36	4	34
	Ghana	...	1	19	22
	Guinea	...	...	6	<1
	Liberia	...	...	31	-
	Mali	...	...	9	19
	Nigeria	3	4	5	5
	Senegal	...	...	10	15
Sierra Leone	...	...	...	4	
Togo	...	...	6	20	

Sources: 2011&2012: UNAIDS global HIV/AIDS database

2009 & 2010: WHO/UNICEF/UNAIDS Global HIV/AIDS Response epidemic update and health sector progress towards Universal Access Progress Reports

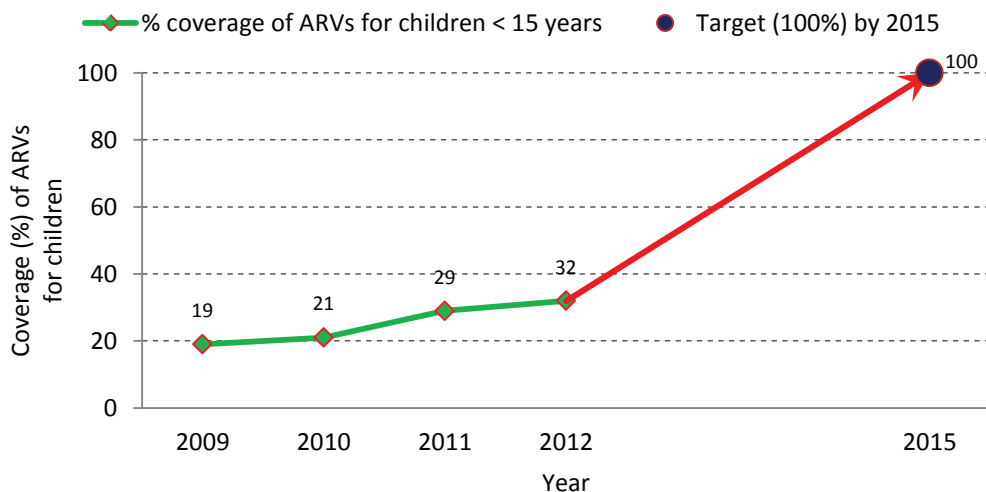
## 5.6 Antiretroviral treatment for HIV positive-children

Provision of ARVs to children aged less than 15 years has been lagging behind than that for adults in the WHO African Region. Between 2009 and 2012, there

was an increase from 19% in 2009 to 32% in the provision of ARVs to children living with HIV, a modest increase of 15% (Figure 5.4). This increase is minimal given that the 100% target by 2015 is close.



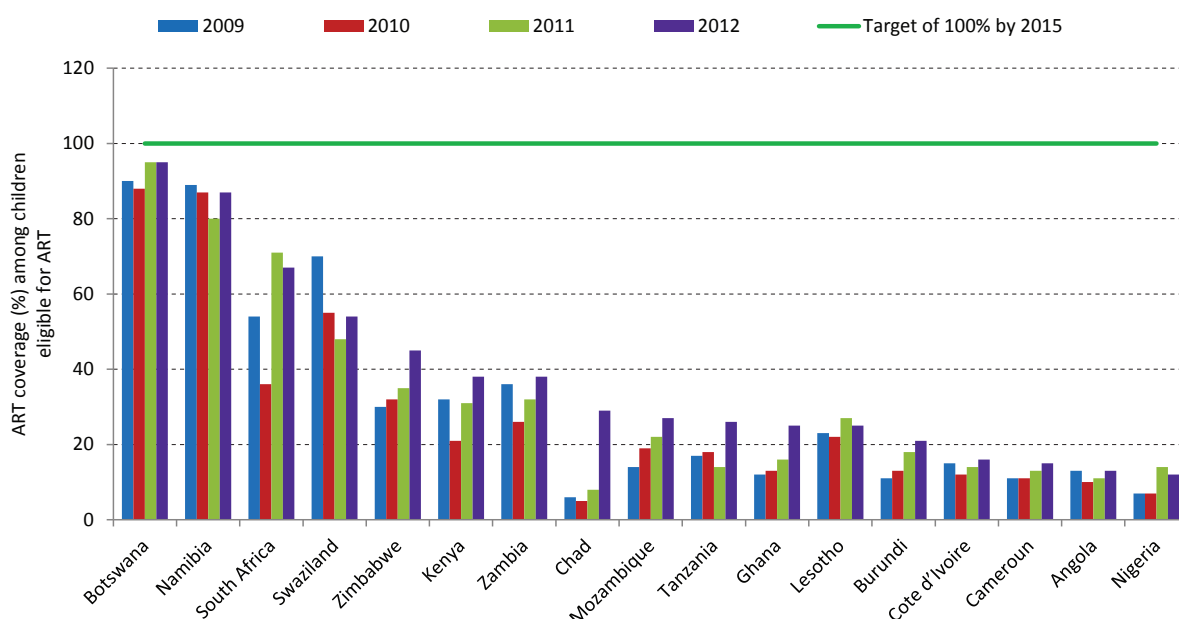
**Figure 5.4: Trends (%) in the coverage of ARVs for children in WHO African Region; 2009- 2012**



Sources: 2011 & 2012: UNAIDS global database 2013(21 priority countries)  
 2009 & 2010: WHO/UNAIDS/UNICEF Global HIV/AIDS Response epidemic update and health sector progress towards Universal Access Progress Reports t (2009 and 2010)

Progress in ARV coverage among HIV positive children varies widely between countries (Figure 5.5). As of December 2012, only Botswana reported providing more than 95% of the HIV infected children with ARVs. Ethiopia (24%), Nigeria (12%) and Democratic Republic of Congo (9%) were lagging behind in 2012.

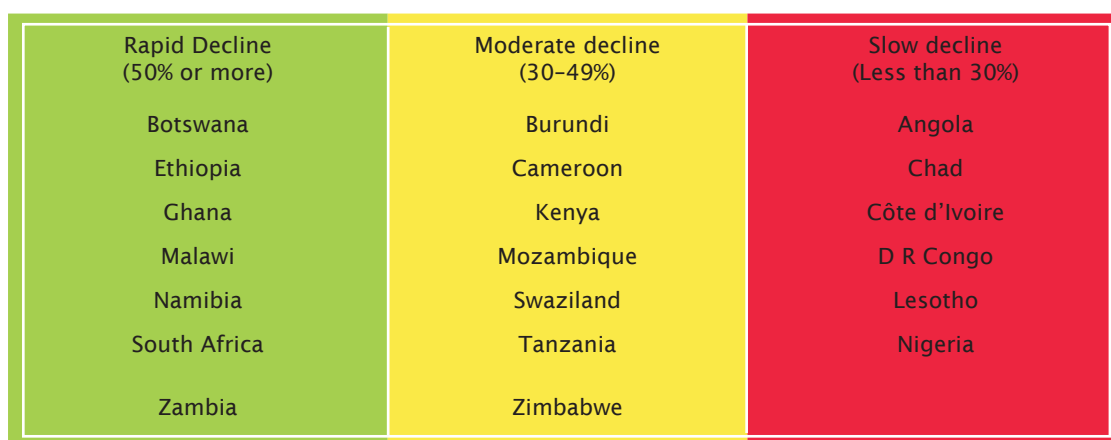
**Figure 5.5: Coverage of ARV among children in selected countries, WHO African Region, 2009 – 2012**



Sources: 2012: WHO/ UNICEF/UNAIDS Global Update on HIV treatment 2013: Results, impact and opportunities  
 2011: UNAIDS Global Report on AIDS epidemic 2012,  
 2009 and 2010: WHO/UNAIDS/UNICEF Global HIV/AIDS Response epidemic update and health sector progress towards Universal Access Progress Reports 2010, 2011

The performance of PMTCT programmes in general has not been optimum, particularly with children. As of 2012, only 7 out of the 20 priority countries in Africa with data had reduced new infections among children by 50% compared with 2009 (Figure 5.6). Another 7 countries had moderate declines (30-49%) while 6 countries experienced very low declines of less than 30%.

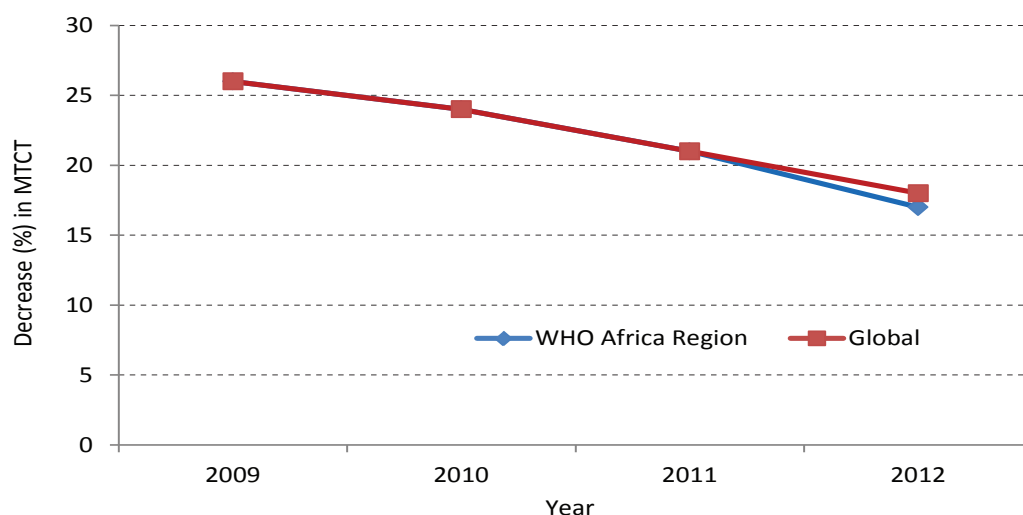
**Figure 5.6: Reduction in new HIV infections among children in the 20 eMTCT priority countries, WHO African Region, 2009-2012**



Source: UNAIDS. 2013 Progress Report on the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive

As a consequence, mother-to-child transmission rates have been generally declining since 2009 in the region comparing favourably with the global trends. Figure 5.7 shows that the MTCT rates have been generally declining since 2009 in the region comparing favourably with the global trends.

**Figure 5.7: Decrease (%) in MTCT in the WHO Africa Region Compared with global rates, 2009 - 2012**

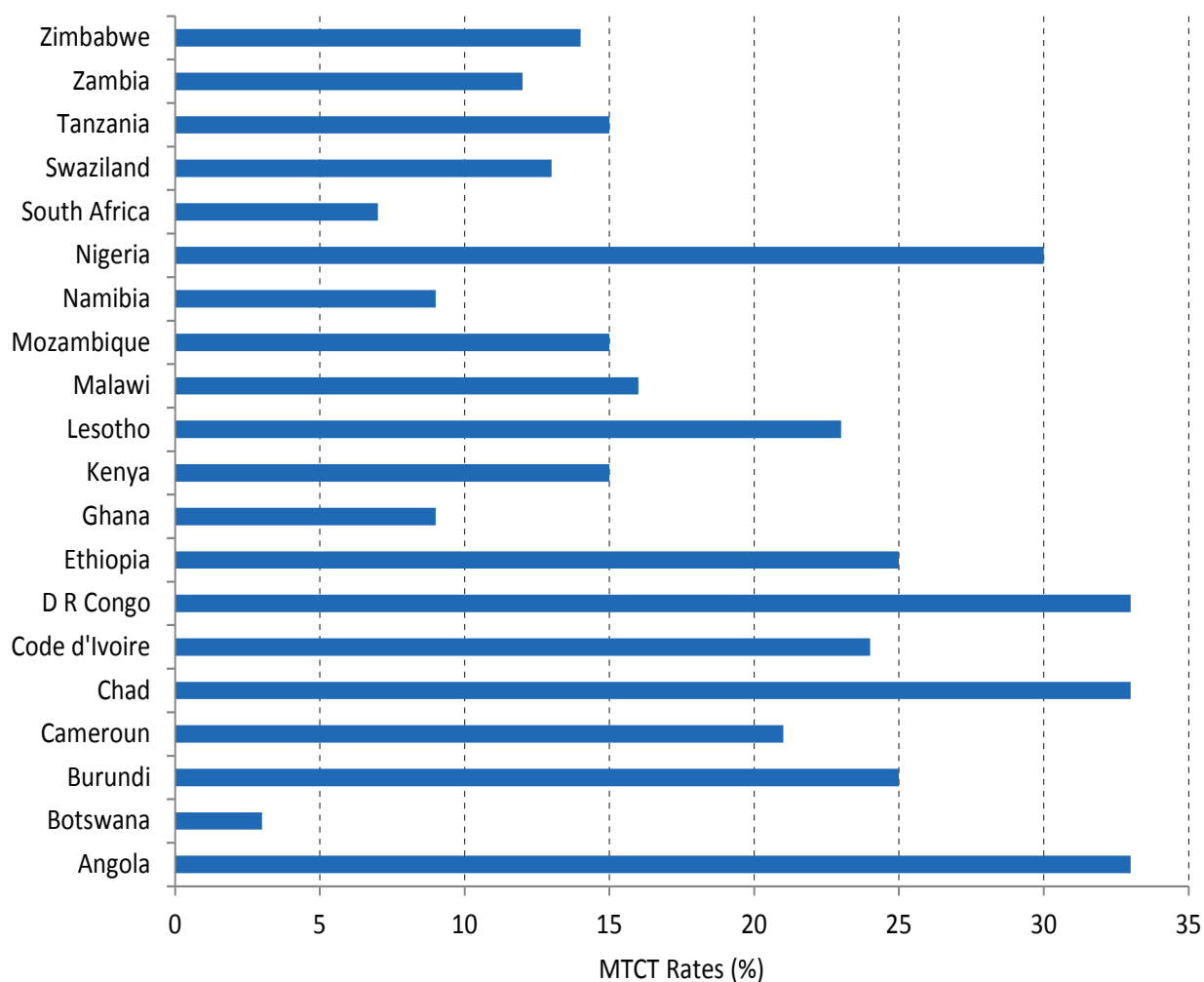


Source : UNAIDS database 2013

Analysis of MTCT rates in different countries reveals that the decline is heterogeneous with only Botswana (3%) and Mauritius (3%) estimated to have reached the target value of 5% or less for breastfeeding communities (Figure

5.8); while South Africa (7%), Namibia (9%) and Ghana (9%) have also made impressive progress. Ghana has had the largest decline in MTCT rates (Box 5.3) largely due to integration of PMTCT services in MNCH services.

**Figure 5.8: MTCT Rates in selected countries in the WHO African Region, 2012**



Source: UNAIDS, 2013 Progress Report on the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive

**Box 5.3: Ghana country case study on reduction of MTCT rates:**

Ghana is one of the 21 priority countries with a high burden of mother-to-child transmission of HIV. Led by high level political and stakeholder support, the country developed a PMTCT national scale-up plan for 2011-2015 in 2010 with a vision to ensure a generation free of AIDS and to eliminate MTCT by 2015. Ghana achieved the highest reduction in new infections among children and was ranked high amongst countries with successful PMTCT programmes. The risk that a woman living with HIV will transmit the virus to her child has declined from 31% in 2009 to 9% (7-11%) in 2012.

**These results were driven by integration of PMTCT within MNCH services:**

- Strong programmatic leadership, clear national guidelines, protocols and manuals for implementation and training

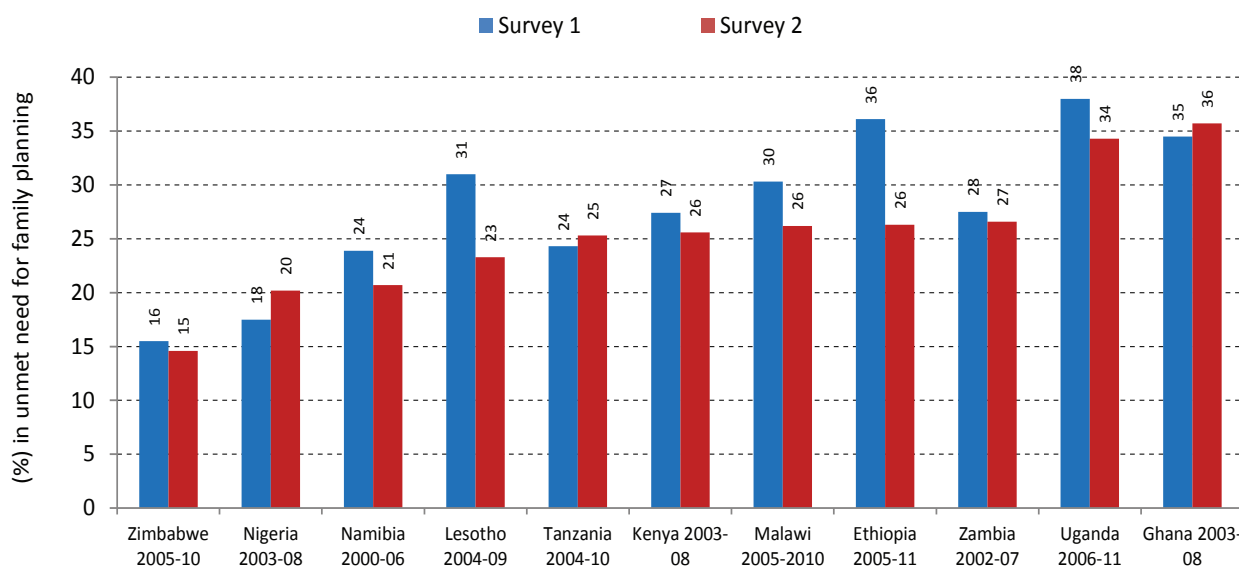
- PMTCT delivery in the context of focused antenatal already and collaboration with Family Health Department of Ghana Health Service
- Move from PMTCT Option A to B for more efficacious and effective ARVs.
- PMTCT course being part of the pre-service curriculum for midwifery and community health training schools
- Integration of Family Planning in PMTCT services including procurement and distribution of key commodities and using SMS texting (common IT platform) for commodity stock monitoring for both SRH and HIV commodities
- A highly motivated multi-task and dedicated cadre of health care workers

**5.7 Unmet need for family planning**

There are significant gaps between women's desire to delay or avoid having children and their actual use of contraception. Although data are not available for all countries, the unmet need for family planning in the WHO African Region was estimated at 25% in 2010. This means that in this region one in every four women 15-49 who is married or in union has an unmet need

for family planning (11). Analysis of DHS data on unmet needs in 11 countries in the region with at least 2 data points reveals that reduction in the unmet need for family planning has been very slow and at varying rates. The Global Plan target of reduction to zero of the unmet need for family planning by 2015 is far from being achieved by countries in the WHO African Region. (Figure 5.9)

**Figure 5.9: Trends (%) in unmet need for family planning, WHO African Region**



Source : Demographic and Health Surveys country reports

## 5.8 Challenges and the way forward

All countries in the region recognize PMTCT as one of the national priorities and are committed to elimination of new HIV infection among children and keeping their mothers alive by 2015. Progress has been made in expanding and scaling up HIV prevention and treatment for women and children resulting in increasing numbers of pregnant women and children being tested for HIV and of HIV positive pregnant women getting ARV for PMTCT and ART for their own health since 2009.

However, coverage of PMTCT services varies greatly in the region. While some countries (Botswana, Ghana, Namibia, Sierra Leone and Zambia) have reached the 2015 target of putting at least 90% of HIV positive pregnant women on ARVs, some others (Angola, Chad, DRC and Nigeria) have been lagging far behind.

The challenges that countries have to face include addressing the bottlenecks related to the availability of skilled human resources at all levels, ensuring continuity of services along the PMTCT cascade through long term retention and adherence, and making health systems more responsive.

The high rate of coverage of first antenatal visit in the WHO African Region is a great opportunity, a positive enabling factor and an entry point for most women to access HIV prevention and treatment interventions for themselves, their children and their partners. The implementation of the 2013 WHO consolidated treatment guidelines that recommend early initiation of antiretroviral prophylaxis and treatment with the move to Option B/B+ requires strengthening of the maternal, newborn and child health platform.

To maintain the momentum and meet the internationally agreed upon goal, intensified efforts are needed to ensure that all pregnant women are tested and counselled and treatment provided for those that are pregnant and living with HIV. Countries are encouraged to adopt and replicate innovative approaches that have produced success in their own countries or elsewhere, while taking into account the country context. These include:

- Integration of PMTC services within Mother Newborn and Child Health programmes
- Couples counselling and testing and a family-centred approach
- Community based services that will ensure that all pregnant women and children hard to reach have access to PMTCT and antenatal care services.
- Task shifting policies and other measures to address the human resource challenges.
- Strategic information system for designing, guiding and evaluation of the implementation of tailor made interventions to meet the needs of pregnant women living with HIV and children.
- Adoption of more efficient models of service delivery including availability and proper use of medicines, diagnostics and commodities, health financing, and governance.

Intensified efforts are needed to improve the diagnosis of HIV among infants as well as in older children born of women living with HIV, and to link them to HIV treatment, care and support services. In addition, follow up of HIV exposed children, as well as their mothers, needs to be rigorous to minimize attrition and loss to follow up. Further strengthening of linkages and integration of HIV programmes with other health programmes such as maternal, neonatal and child health, sexual and reproductive health, TB and STI control programmes need to be accelerated.

The 2013 WHO guidelines that recommend simpler, effective ART regimens and early initiation of antiretroviral therapy will increase the numbers of pregnant women and children living with HIV who need antiretroviral medicines. This will require more investments into programming of PMTCT interventions especially financial and human resources, more training and capacity building for health providers, task shifting policies and others measures to address the human resource challenges, strengthened laboratory capacity and further integration of PMTCT services in other related health sector programmes and further decentralization of services.

# REFERENCES

1. UNAIDS. *Global Plan Towards the Elimination of New HIV Infections, Among Children by 2015 and Keeping their Mothers Alive*. 2011 UNAIDS, Geneva.
2. WHO/AFRO. *Strategic framework for the elimination of new HIV infections among children in Africa by 2015*. 2013. WHO/AFRO, Brazzaville.
3. WHO/AFRO. *HIV/AIDS: Strategy for the WHO African Region*. WHO/AFRO, Brazzaville.
4. UNAIDS. *Global Report on the global AIDS epidemic 2013*. 2013. UNAIDS, Geneva.
5. Omeilla Lincetto, Seipati Mothbesoane, Anonh J, Patricia Gomez & Stephen Munjana. *Antenatal care*. [http://www.who.int/pmnch/media/publications/aonsectionIII\\_2.pdf](http://www.who.int/pmnch/media/publications/aonsectionIII_2.pdf). Accessed on 20 November 2013.
6. WHO Global HIV/AIDS database
7. WHO/AFRO. *HIV in the WHO African Region Progress towards achieving universal access to priority health sector interventions 2011 Update*. 2011. WHO/AFRO, Brazzaville.
8. UNAIDS HIV/AIDS database
9. WHO, UNICEF, UNFPA and World Bank. *Trends in maternal mortality: 1990 to 2010*. 2012. WHO, Geneva.
10. WHO. *Global update on HIV treatment 2013: results, impact and opportunities*. June 2013. WHO, Geneva.
11. [http://www.measuredhs.com/data/Country\\_DHS\\_reports\\_2000-2010](http://www.measuredhs.com/data/Country_DHS_reports_2000-2010)

## 6. SCALING UP TREATMENT AND CARE FOR PEOPLE LIVING WITH HIV

### Key messages

- Considerable progress has been made in improving access to antiretroviral therapy for eligible people living with HIV. As at the end of December 2012, a total of 7,526,400 (68%) people were receiving antiretroviral therapy, an increase of more than 90% from 3,192,000 in December 2009.
- The main factors driving the increase in access to ART the steep rise in the number of facilities providing ART services, decentralization of ART services beyond referral and urban areas to rural areas, and primary health care facilities, adoption of task-shifting policies, capacity building, and increased domestic and international funding.
- Good progress is being made in the implementation of TB/HIV collaborative activities. Coverage of antiretroviral therapy in people with TB/HIV has increased from 37% in 2009 to 57% in 2012; and 74% of people with TB knew their HIV serostatus, up from 69% in 2011.
- Improved access to antiretroviral therapy is beginning to increase life expectancy in some countries and has significantly reduced the number of new HIV infections, AIDS related deaths and TB related deaths among people living with HIV in the region.
- Despite the good progress made on the whole, in several countries the pace has been slow. For example Nigeria, which has the second highest number of people living with HIV in the WHO African Region, had ART coverage of 36% in 2012. The Democratic Republic of Congo, also with high numbers of people living with HIV, had coverage of 38% in 2012.
- Greater investment in health systems strengthening will be required to address the implications of implementing the 2013 WHO guidelines on antiretroviral treatment in order to achieve universal access and maximize the impact of ART in the region.

### 6.1 Introduction

The scaling-up of life-saving and infection-prevention HIV treatment in the WHO African Region constitutes one of the great public health achievements during the past decade. By the end of

December 2012, a total of 7,524,000 (68%) people in need of ARVs were receiving antiretroviral therapy, an increase of more than 90% from 3,192,000 in December 2009 (1). The



accomplishments are a reflection of the strong political commitment, community mobilization, technical innovation, and increasing domestic and international funding.

WHO and partners have continued to provide normative guidance and technical support for the scale up of HIV treatment and care programmes. The recent 2013 WHO guidelines “Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infections. Recommendations for a public approach” which recommend earlier initiation of antiretroviral therapy at CD4 count  $\leq 500$  cells/ $\mu$ l, immediate provision of ART for serodiscordant couples, pregnant women living with HIV, people with TB and HIV, people with HIV and hepatitis B, and all children living with HIV who are less than 5 years will lead to many more people living with HIV becoming eligible for antiretroviral therapy. It is expected to contribute to an improvement in the

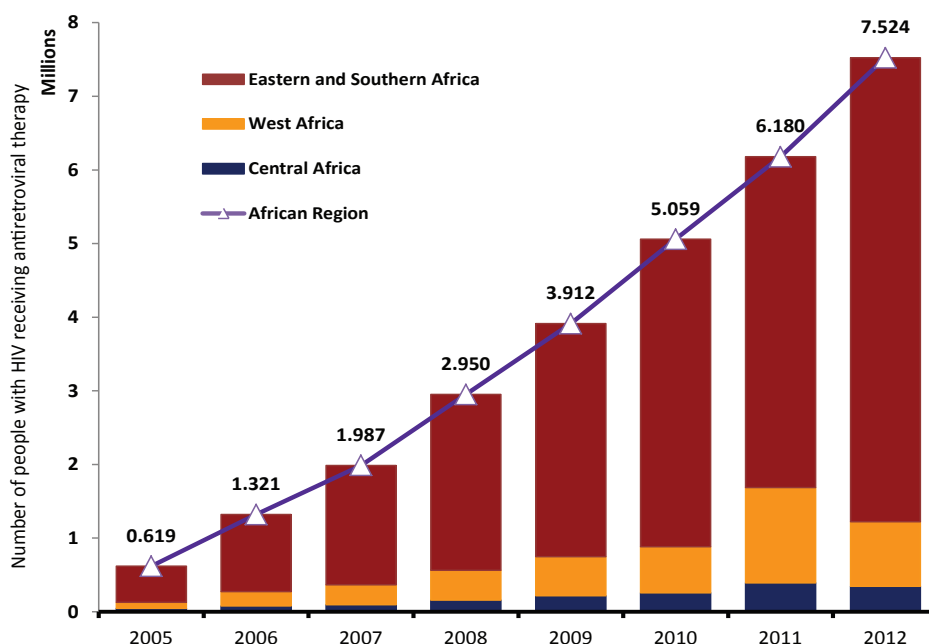
quality of life of people living with HIV and reduce AIDS related mortality as well as contribute to further reductions in new HIV infections (2).

This chapter reviews the progress made by countries in the provision of ART for people living with HIV, management of TB and HIV coinfection, and surveillance and monitoring HIV drug resistance (HIVDR) in the WHO African Region in the recent past.

## 6.2 Coverage of antiretroviral therapy among people living with HIV

As at the end of December 2012, a total of 7,524,000 people were receiving antiretroviral therapy in the WHO African Region (Figure 6.1) based on the 2010 WHO guidelines. This represented a 90% increase from 3,912,000 in 2009. About 6,991,492 (68%) were adults aged 15 years and above (1).

**Figure 6.1: Trends in numbers of people (adults and children) living with HIV receiving antiretroviral medicines in the WHO African Region, 2005-2012**



There were wide variations in antiretroviral coverage rates between countries (Table 6.1). Coverage of antiretroviral therapy among eligible people living with HIV in the 42 countries in the WHO African Region that reported varied from 1% in Madagascar to over 95% in Botswana and Cape Verde in 2012.

The expansion of access to ART has been particularly impressive in eastern and southern Africa, subregions that account for about 50% of all people living with HIV and where almost 6.4 million people were receiving ART in 2012. Ten countries of which 6 were in southern Africa (Botswana, Namibia, South Africa, Swaziland, Zambia and

Zimbabwe) and three in eastern Africa (Eritrea, Kenya and Rwanda) and one (Cape Verde) in western Africa had ART coverage of more than 80% according to the 2010 WHO treatment guidelines in 2012.

Access to ART also increased in western and central Africa. However in several countries the pace has been slow. For example Nigeria, which has the second highest number of people living with HIV in the WHO African Region, had an ART coverage of 36% in 2012. The Democratic Republic of Congo, also with high numbers of people living with HIV, had a relatively low ART coverage of 38% in 2012.

**Table 6.1: Estimated number of adults receiving and in need of antiretroviral therapy and percentage coverage of ART, WHO African Region, 2012**

Subregion	Country	Reported No. of eligible adults receiving antiretroviral therapy in 2012	Estimated No. of eligible adults needing Antiretroviral therapy in 2012	Estimated ART coverage (%) based on 2010 WHO Guidelines
Southern Africa	Comoros	23	<500	7
	Botswana	201,822	200,000	>95
	Lesotho	87,352	150,000	59
	Madagascar	357	25,000	1
	Malawi	368,690	480,000	76
	Mauritius	1,517	4,200	36
	Mozambique	282,687	590,000	48
	Namibia	105,347	120,000	91
	South Africa	2,010,340	2,500,000	81
	Swaziland	80,103	93,000	87
	Zambia	446,841	520,000	86
	Zimbabwe	518,801	610,000	85
Eastern Africa	Eritrea	7,608	9,400	81
	Ethiopia	270,460	400,000	68
	Kenya	548,588	680,000	81
	Seychelles	n/a	n/a	n/a
	Rwanda	107,021	110,000	94
	Uganda	403,089	580,000	70
	Tanzania	399,886	540,000	68

Subregion	Country	Reported No. of eligible adults receiving antiretroviral therapy in 2012	Estimated No. of eligible adults needing Antiretroviral therapy in 2012	Estimated ART coverage (%) based on 2010 WHO Guidelines
Central Africa	Angola	39,704	85,000	48
	Burundi	27,098	40,000	67
	Cameroon	117,791	240,000	49
	Central Africa Republic	....	...	...
	Chad	35,014	82,000	43
	Congo	16,086	36,000	44
	DRC	59,468	170,000	38
	Equatorial Guinea	6,512	....	...
	Gabon	14,512	22,000	67
	Sao Tome and Principe	285	<1,000	51
Western Africa	Algeria	....	....	....
	Benin	23,400	34,000	70
	Burkina Faso	39,049	85,000	48
	Cape Verde	798	<1000	>95
	Cote d'Ivoire	104,750	190,000	44
	Gambia	3,300	5,600	64
	Ghana	66,366	110,000	62
	Guinea	25,552	45,000	57
	Guinea Bissau	5,766	14,000	43
	Liberia	5,048	11,000	47
	Mali	26,839	46,000	58
	Mauritania	1,830	4,500	41
	Niger	11,137	20,000	56
	Nigeria	459,465	1,300,000	36
	Senegal	13,485	20,000	67
	Sierra Leone	7,802	22,000	35
	Togo	28,213	57,000	50

Source: UNAIDS Global AIDS epidemic Report, 2013

There is a wide gap in ART treatment coverage between women and men with women more likely to be receiving antiretroviral medicines. In 2011, men comprised only 36% of the people receiving ART but constituted 44% of the people eligible for ART (1). Expansion and scale up of PMTCT services which increase access of women to HIV testing and ART treatment and prophylaxis may partially explain the greater access of women to antiretroviral therapy than men. Men generally also tend to have poorer health-seeking behaviour and in settings where men are more likely than women to have paid work, the opportunity costs of visiting treatment facilities may discourage some men from starting or continuing on ART.

### 6.3 Availability of anti-retroviral therapy facilities

The dramatic increase in the number of facilities providing antiretroviral therapy services is associated with the improved antiretroviral treatment coverage among people living with HIV in WHO African Region. The number of health facilities providing antiretroviral therapy increased from 8,462 in 2009 to 14,123 in 2012 in 41 countries that provided data, an increase of about 67% in three years (Annex 2). The majority of the ART treatment facilities were in public facilities (83%), 6% were in private sector facilities, the location for the rest was not specified. There has been decentralisation of ART treatment facilities

beyond hospitals in the region and to some extent integration of HIV services into other health related programmes. In 2012 2,489 of the ART treatment facilities were in health centres, 1,659 in antenatal clinics, 2,080 in TB clinic settings and 2,076 in STI clinics.

#### 6.4 Retention of people living with HIV on antiretroviral therapy

The stage at which someone begins antiretroviral therapy has a great impact on her/his chances of responding to treatment. Adherence to the prescribed regimen is important not only for the health outcome of the individual but also reduces the occurrence of drug resistance. Studies conducted in the WHO African Region have shown high attrition rates and loss to follow up of people living with HIV at the various steps in the HIV treatment cascade (Box 6.1).

The treatment cascade involves the following steps: Step 1: Diagnosing HIV infection; Step 2: Linking people who take an HIV test to treatment and prevention services; Step 3: Enrolling and retaining people in pre-Antiretroviral therapy (pre-ART) care,; Step 4: Initiating ART; and

Step5: Ensuring long term adherence and ultimately achieving and maintaining viral load suppression (3).

A systematic review of pre ART retention in care in 28 studies conducted in Africa found that there was attrition at every stage in the HIV treatment cascade. There was 59% retention from the time of HIV testing to receipt of CD4 count results or clinical, diagnosis 46% retention from staging to eligibility and 68% retention from ART eligibility to ART initiation. The review concluded that less than one-third of the people testing HIV positive and not yet eligible for ART when diagnosed were retained continuously in care (4). A systematic review of patient retention on antiretroviral therapy programmes in sub Saharan Africa, showed that at 6 months after initiation of ART the retention rate was 86.1%, and then it dropped to 80.2% at 12 months, 76.8% at 24 months and 72.3% at 36 months. Loss to follow up was cited as the major cause of attrition followed by death (5). Another study on retention among patients in the Tanzanian National Care and Treatment Programme showed that loss to follow up and not mortality was the major cause of attrition (6).

#### Box 6.1: HIV Treatment Cascade



Source: WHO/UNICEF and UNAIDS: *Global update on HIV treatment 2013: Results, Impact and opportunities* (3)

There are marked variations in retention rates among people living with HIV receiving antiretroviral medicines 12 months after initiation of antiretroviral therapy in countries in the WHO African Region (Table 6.2). The

proportion of adults and children receiving antiretroviral medicines after 12 months of antiretroviral therapy initiation varied from 28.7% in Equatorial Guinea to 95% in Botswana and then 100% in Comoros.

**Table 6.2.: Proportion (%) of adults and children receiving antiretroviral medicine after 12 months of initiation of antiretroviral therapy in selected countries, WHO African Region, most recent year**

Subregion	Country	Year	% adults and children on ARV after 12 months of ART initiation
Southern Africa	Comoros	2012	100
	Botswana	2012	95
	Lesotho	2010	74
	Madagascar	2011	94.7
	Malawi	2011	80
	Mauritius	2011	87.4
	Mozambique	2010-2011	74
	Namibia	2011	81.5% adults, 83.9% children
	South Africa	...	...
	Swaziland	2011	87.2% (adults=87.1%, children (87.7%)
	Zambia	2011	59.9
	Zimbabwe	2011	85.7
Eastern Africa	Eritrea	...	...
	Ethiopia	2009	72.5
	Kenya	...	...
	Seychelles	2012	100
	Rwanda	...	...
	Uganda	2011	84.1
	United Republic of Tanzania	2012	70.7
Central Africa	Angola	2009	61.3
	Burundi	...	...
	Cameroon	2012	61.5
	Central Africa Republic	2011	58.7
	Chad	2011	34.6
	Congo	...	...
	Democratic Republic of	2011	74.9 (MSF/Kabinda)
	Equatorial Guinea	2012	28.7
	Gabon	2009	86.3
	Sao Tome and Principe	...	...
	Western Africa	Algeria	2010
Benin		2011	<15 years 86.9, >15 years 94.0
Burkina Faso		2012	76.8
Cape Verde		2010-2012	96.6
Cote d'Ivoire		2009	67
Gambia		2011	81.9
Ghana		2011	71
Guinea		2008	77.1
Guinea Bissau		2010	62
Liberia		2010	62
Mali		2006	63.3
Mauritania		...	...
Niger		2011	71.7
Nigeria		2011	73.4
Senegal		2010	74
Sierra Leone		2011	83
Togo		2011	87.1

Source: GARPR country reports 2012

## 6.5 TB/HIV collaborative activities

The dual HIV and tuberculosis (TB) epidemics remain a challenge to people living with HIV and to the health sector. People living with HIV and latent TB (infected but not active) are more likely to develop active TB than people who are not HIV infected. In 2012, 1.1 million (13%) of 8.6 million who developed TB were HIV positive. The WHO African Region accounted for 75% of the HIV positive incident TB patients. The proportion of people who developed TB and were also positive for HIV dramatically decreased from 43% in 2011 to 13% in 2012 (7, 8).

WHO's recommendations on interventions needed to prevent, diagnose and treat TB in people living with HIV are known collectively as "Collaborative TB/HIV activities". These activities include; testing of TB patients for HIV; provision of antiretroviral therapy and cotrimoxazole preventive therapy (CPT) to TB patients living with HIV; offering isoniazid preventive therapy (IPT) to people living with HIV who do not have active TB; controlling the spread of TB infections through intensified case finding; and control of spread of TB in health and congregate settings. The latter three are referred to as the 'three Is' (7).

The 2013 WHO guidelines on antiretroviral treatment and the WHO policy on collaborative HIV/TB activities recommend immediate initiation of antiretroviral therapy for all people living with HIV and TB regardless of the CD4 cell count (2,7). Antiretroviral therapy significantly reduces

by 65% the risk of people living with HIV developing tuberculosis and ART lowers the risk of death among people living with HIV and who have TB by 50% (1).

### Progress in the implementation of collaborative TB/HIV activities

Countries in the WHO African Region are making good progress towards achieving the targets on collaborative TB/HIV activities in the 'Global Plan to Stop TB 2011-2015' (9). The targets related to collaborative TB and HIV services in the Global Plan are; 100% of TB patients tested for HIV; 100% of TB patients infected with HIV to be provided with cotrimoxazole preventive therapy (CPT); 100% of HIV positive TB patients to be treated with ART; 100% of people living with HIV attending HIV care to be screened for TB; and 100% of people living with HIV and without active TB to be provided with isoniazid preventive therapy.

In 2012, 74% of notified TB patients in the WHO African Region were tested for HIV and received their results, an increase from 69% in 2011. In 2012, twenty-nine countries had more than 75% of TB patients tested for HIV, an increase from 22 countries in 2010. Six countries in the Region (Kenya, Malawi, Rwanda, Swaziland, Togo and Zambia) achieved levels of >90% of testing TB patients for HIV in 2012. Zambia tested 100% of the notified TB patients for HIV with Rwanda having a testing rate of 99% (Table 6.3). Countries with the lowest HIV testing rates among notified TB patients were Angola (21%), Democratic Republic of

Congo (31%) and Mali (28%). Ethiopia made a remarkable increase in HIV testing levels among TB patients, from 41% in 2011 to 65% in 2012.

The number of people diagnosed with TB and living with HIV receiving antiretroviral therapy rose from 37% in 2009 to 57% in 2012 (2,7,8). Eighty percent of people living with HIV and TB in the region were started on cotrimoxazole preventive therapy (CPT) in 2012 and in 12 countries (Angola, Botswana, Burkina Faso, Burundi, Kenya, Lesotho, Mozambique, Namibia, Rwanda, Uganda, United Republic of Tanzania and Uganda), HIV positive TB patients who enrolled on CPT in 2012 exceeded 90%.

The number of people living with HIV enrolled in HIV programmes that were

screened for TB increased by 39% between 2010 and 2011. The trend in numbers of people living with HIV without active TB who were started on isoniazid preventive therapy is rising but it is still relatively low. In 2012, about 520,000 people living with HIV received isoniazid preventive therapy (IPT), with South Africa, accounting for 75% (370,000). South Africa is implementing and investing in innovative approaches to address the issue of HIV and TB. This has led to improved screening of TB among people living with HIV and has increased the numbers of people living with HIV who were started on isoniazid preventive therapy (Box 6.3). Sixteen of the high TB/HIV burden countries in the region reported on the numbers of HIV positive people screened for TB in 2012, an increase from 32% in 2010.

#### **Box 6.2: South Africa: Leadership and innovation in HIV**

WHO endorsed Xpert MTB/RIF a new rapid molecular test that can diagnose TB and rifampicin in 100 minutes in 2010. Since then, South Africa has developed and initiated a national plan for phased implementation of Xpert MTB/RIF assay as a replacement for microscopy as the initial diagnostic method. Using existing microscopy centres, South Africa introduced more than 290 GeneXpert machines in more than 140 centres. As of March 2012, about 1.2 million TB screening tests had been performed in 9 provinces. As compared with smear microscopy, GeneXpert doubled the number of laboratory confirmed TB cases

and detected 7% rifampicin resistance. Enhanced TB screening has enabled South Africa to scale up isoniazid preventive therapy among people living with HIV with 373,000 people living with HIV and without active TB being started on IPT.

In August 2012, there was a drop of 41% in the GeneXpert MTB/RIF cartridge price from US\$16.86 to US\$ 9.98. This was expected to increase the scale up of TB screening in the countries. GeneXpert MTB/RIF is being rolled out in many countries in the Region.

*Source: WHO Global TB Report 2012&UNAIDS Global AIDS update 2013*

The coverage of cotrimoxazole preventive therapy among people living with TB and HIV in the region has increased to over 80% in 2012 (Table 6.3). Thirteen out of the 17 TB/HIV high burden countries in the region that reported had cotrimoxazole

preventive therapy (CPT) coverage of more than 90% in 2012, Angola was the only country in 2012 that reported 100% coverage and Congo had the lowest coverage of 20%.

**Table 6.3: Testing TB patients for HIV, Provision of cotrimoxazole preventive therapy (CPT) to TB patients living with HIV, coverage of ART among TB patients living with HIV and prevention of TB among people living with HIV in High TB/HIV burden countries in the WHO African Region**

Country	Estimated No. of HIV positive incident TB cases	No. of TB patients with known HIV status	% of notified TB patients tested for HIV	% of tested TB patients found HIV infected	% of HIV infected TB patients started on CPT	% of HIV infected TB patients started on ART	No. of people living with HIV screened for TB	No. of people living with HIV started on isoniazide preventive therapy
Angola	5.5	12	23	9.6	100	100	12	1.1
Botswana	5.1	6.0	89	63	91	66	...	...
Burkina Faso	1.6	4.6	84	15	96	75	7.4	...
Burundi	2.5	5.7	82	19	94	55	0.2	...
Cameroun	19	21	82	37	83	55	12	..
CAR*	5.3	3.8	46	39	28	20	...	...
Chad	4.1	4.8	44	20	-	65	1.0	...
Congo	3.6	2.0	17	33	20	23	...	...
Cote d'Ivoire	8.0	21	85	27	75	44	...	...
DRC	16	35	31	16	61	40	...	...
Ethiopia	23	96	65	10	37	82	272	30
Ghana	2.8	12	78	24	72	37	...	...
Kenya	45	93	94	39	98	74	...	...
Lesotho	9.9	10	88	75	97	53	21	16
Malawi	16	19	93	59	88	81	393	21
Mali	1.2	1.5	23	28	42	100	...	...
Mozambique	83	110	94	58	98	55	...	17
Namibia	7.3	5.8	88	47	99	72	12	12
Nigeria	46	80	84	23	80	56	140	2.3
Rwanda	2.9	3.2	99	26	99	...	122	...
Sierra Leone	3.9	4.8	87	12	26	69	8.9	1.1
South Africa	330	390	84	65	74	54	950	370
Swaziland	13	15	95	77	98	66	69	1.9
Togo	1.2	1.4	91	24	87	76	...	...
Uganda	35	42	86	50	94	49	357	...
UR Tanzania**	32	30	82	39	96	60	...	...
Zambia	35	32	100	54	93	60	...	...
Zimbabwe	55	42	42	70	88	18	...	...
African Region	830	1040	74	43	79	55	2392	473

... no data reported, The numbers are for new TB patients only

CAR= Central Africa Republic, UR Tanzania= United Republic of Tanzania

Source: WHO Global TB report 2013

## 6.6 Surveillance and monitoring of HIV Drug Resistance (HIVDR)

The emergence of HIV drug resistance can be minimized using appropriate strategies.

With increasing coverage of antiretroviral therapy, it is anticipated that some degree of HIV drug resistance may occur, even when appropriate antiretroviral therapy is provided to people living with HIV and



adherence levels are high. However, adherence to treatment and the use of fixed dose combinations can minimize the emergence of HIV drug resistance (10,11)

Drug resistance can be grouped into two categories; transmitted resistance which occurs when previously uninfected people are infected with an HIV drug resistant virus, and acquired resistance when resistance mutations emerge because of drug selective pressure in

individuals receiving antiretroviral therapy (10,11). The WHO Classification of Level of transmitted HIV drug resistance in recently HIV infected populations is shown in Box 6.3. Data on HIV drug resistance provides the basis for selecting future first line treatment regimens, identifying the most effective second line regimens for people failing on first line regimen, and selecting optimal approaches for PMTCT and for pre-and-post exposure prophylaxis (10, 11).

**Box 6.3: WHO Classification of level of transmitted HIV drug resistance in recently HIV infected populations in specific geographical areas**

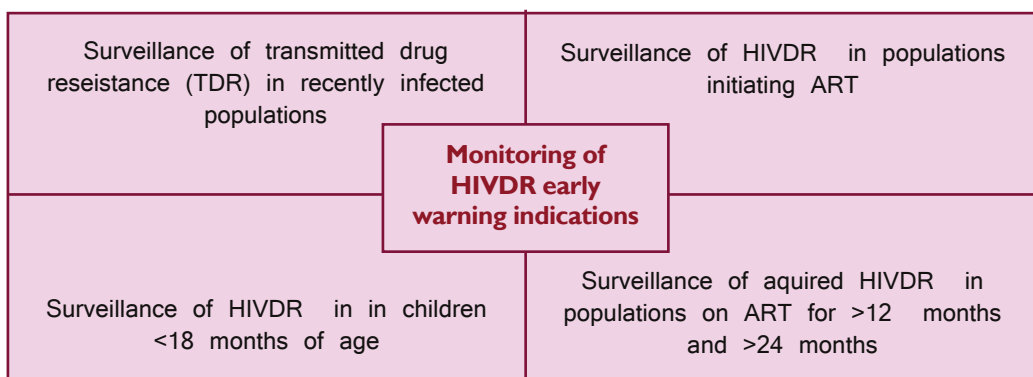
Low = Below 5%  
 Moderate = Between 5% and 15%  
 High = Over 15%

*Source: World Health Organization Global Strategy for the Surveillance and Monitoring of HIV Drug Resistance, 2012*

In 2012, WHO launched an updated version of the Global HIVDR Surveillance and Monitoring Strategy (11) comprising a comprehensive package of surveys that

should be implemented in all countries scaling up and maintaining people on ARVs (Figure 6.2).

**Figure 6.2: WHO 2012 HIV drug resistance surveillance and monitoring strategy**



*Source: Source: World Health Organization Global Strategy for the Surveillance and Monitoring of HIV Drug Resistance 2012*

The routine monitoring of programmatic factors in the WHO Global HIV drug resistance surveillance and monitoring

strategy includes a set of 5 early warning indicators that are to be monitored at all antiretroviral treatment settings/clinics

(Figure 6.3). The data on early monitoring indicators assist clinics and countries to take timely corrective measures if need arises (11).

All clinics providing antiretroviral therapy are should monitor early warning indicators annually as a component of routine programme monitoring and evaluation. (11).

**Figure 6.3: WHO updated HIV drug resistance early warning indicators and targets, 2012**

Early Warning Indicators	Target
1. On-time pill pick -up	Red: < 80% Amber: 80-90 % Green: >90%
2. Retention in care	Red: < 75% retained after 12 months of ART Amber: 75-85% retained after 12 months of ART Green: >85% retained after 12 months of ART
3. Pharmacy stocks-outs	Red: < 100% of a 12 month period with no stock-outs Green: 100% of a 12month period with no stock-outs
4. Dispensing practices	Red: > 0% dispensing of mono- or dual therapy Green: 0% dispensing of mono- or dual therapy
5. Viral load suppression at 12 months*	Red: < 70% viral load suppression after 12 months of ART Amber: 70-85% viral load suppression after 12 months of ART Green: >85% viral load suppression after 12 months of ART
* Childrened: < 2 years: red:< 60%; amber: 60-70%; green:> 70% viral load suppression after 12 months of ART	

Source: WHO Global strategy for the surveillance and monitoring of HIVDR, 2012

### Monitoring of early warning indicators

A literature review on monitoring of early warning indicators (EWI) in a cohort of 907 clinics providing antiretroviral therapy from 2004 to 2009 in the WHO African Region showed that 74% of the clinics met the recommended target of 100% on "prescribing practices". In the same period, 63% of the 537 ART clinics in the region that were monitored on "antiretroviral drug supply continuity" met the recommended target of 100%. Ninety-six percent of the 24 clinics that were monitored on "viral load suppression at 12 months" met the recommended target of  $\geq 70\%$ . On the whole, performance related to "loss to follow up", "on time antiretroviral pick up" and "on time appointment keeping" was much below the recommended targets.

### Monitoring HIV drug resistance

Forty three WHO surveys on transmitted HIV drug resistance were conducted in 18 countries in the WHO African Region between 2004 and 2010. The surveys were conducted in ANC sites among pregnant women mostly including only women in their first pregnancy to minimize the likelihood of including women with previous exposure to regimens for PMTCT, and women younger than 25 years of age to minimize the likelihood of including individuals with chronic infection and with previous exposure to ARVs. Men and women younger than 25 years were also enrolled in the surveys from VCT centres. One survey was conducted among sex workers in one country (11).

The findings from the surveys showed a small increase in transmitted HIV drug resistance in the region particularly to non-nucleoside reverse transcriptase inhibitors among recently infected populations in the areas surveyed (11). Resistance to all the ARV drugs increased from 0.2% in 2005 to 2.8% in 2010, while for non-nucleoside reverse transcriptase inhibitors (NNRTI), the increase was from 0.0% in 2005 to 2.0% in 2010. For nucleoside reverse transcriptase inhibitors (NRTI) the increase was from 0.0% in 2005 to 0.6% in 2010. On the other hand, there was a decline in resistance for protease inhibitors (PI) from 2.8% to 0.0% in the same period (11).

In addition to monitoring transmitted HIV drug resistance, WHO recommends monitoring of acquired HIV drug resistance. Prospective surveys on acquired HIV drug resistance are conducted at clinics offering antiretroviral therapy. The surveys enrol both ARV drug naïve (no previous exposure) and antiretroviral drug exposed people living with HIV. A systematic review of nine studies including seven in Africa conducted between 2004 and 2010 revealed pooled estimates of HIV drug resistance prevalence among 574 people experiencing first line NNRTI failure at

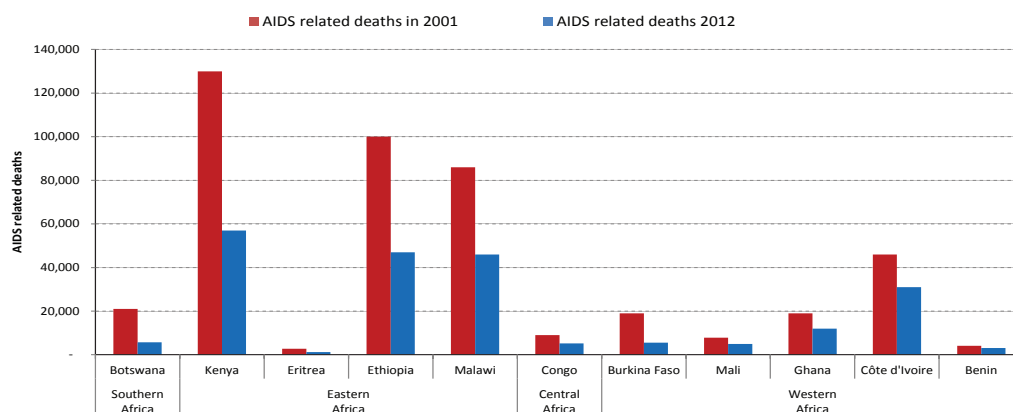
median duration 12 months of 62% to all drugs, 57% to NRTI and 47% to NNRTI in Africa (11).

In spite of the findings on transmitted HIV drug resistance, the surveys showed that if people were switched to second line regimens soon after virological failure, standard second line treatment combinations were likely to be effective for the majority of patients failing first line antiretroviral therapy (11)

### 6.7 Impact of antiretroviral therapy

The increased antiretroviral coverage in the WHO African Region has resulted in a marked decline in AIDS related deaths in both adults and children (Figure 6.4). It is estimated that antiretroviral therapy prevented 6.6 million deaths worldwide including 5.4 million in low and middle income countries (1). The link, for example, between Botswana’s early ART programme, the high uptake of ART and the significant reduction (72.8%) in AIDS deaths in the last decade cannot be underestimated. A study in a community in KwaZulu Natal Province in South Africa showed that improved access to ART led to increased life expectancy by 15-20% among people living with HIV who were started on antiretroviral therapy (12).

**Figure 6.4: Decline in numbers of estimated AIDS related deaths in selected countries,WHO African Region, 2001- 2012**



Source: UNAIDS. Global Report on AIDS epidemic 2013

The expansion and scale up of ART in the WHO African Region has resulted in significant declines in the incidence of HIV. New HIV infections in the region have declined among adults and children by 38.5% between 2001 and 2012 (1). A recent study in South Africa found that the incidence of HIV infection fell by 17% for every 10% increase in the number of people receiving antiretroviral therapy (1).

Antiretroviral therapy is associated with decreasing incidence of TB in communities where the coverage rates are high. A recent systematic review showed that ART causes substantial declines in incidence of TB (4). ART is also associated with significant declines in the incidence of common opportunistic infections by 68% to 95%, and with the substantial decline of oral candidiasis, herpes zoster (shingles) and pulmonary tuberculosis, all observed within the first year of ART initiation. Other opportunistic infections that were found to have decreased included Kaposi's sarcoma, cerebral toxoplasmosis, and extra pulmonary tuberculosis. Lesser reductions were observed for cryptococcal meningitis and pneumocystis jirovecii pneumonia (13).

The scaling up of antiretroviral therapy has also led to a reduction in TB related deaths among people living with HIV. Thirteen countries (Botswana, Burkina Faso, Burundi, Central African Republic, Cote d'Ivoire, Ethiopia, Ghana, Malawi, Namibia, Nigeria, Rwanda, Uganda and Zimbabwe) with high TB/HIV burden countries had a decline in TB related deaths among people living with HIV of more than 50%. An additional six countries (Cameroun, Chad, Kenya, Mali, United

Republic of Tanzania and Zambia) had a decline of 25% to 50% in TB related deaths in the region between 2004-2012. Countries where there was a decline of <25% in TB related deaths among people living with HIV include Angola, Congo, DRC, Lesotho, Mozambique, Sierra Leone, South Africa, Swaziland and Togo in the same period (1).

## 6.8 Challenges and the way forward

The WHO African Region has made remarkable progress in improving access to antiretroviral therapy to eligible people living with HIV. If the momentum is sustained, the region is on track to realising its contribution to the global target of reaching 15 million with life-saving antiretroviral therapy by 2015.

In spite of the progress made, about 30% of eligible adults living with HIV in the region are still in need of antiretroviral therapy. With the new 2013 WHO guidelines on antiretroviral treatment more eligible people living with HIV will need antiretroviral therapy.

The wide gap in antiretroviral therapy coverage between men and women, and also between adults and children needs to be narrowed. It is not clear to what extent key populations such as sex workers and men who have sex with men are accessing ART treatment services. Barriers that hinder men, adolescents and key populations from accessing antiretroviral therapy need to be identified and addressed in the national HIV response.

Maintaining the quality of HIV treatment and care services as countries continue to decentralize and accelerate the scale up of treatment and care interventions is a priority to ensure the greater benefits of antiretroviral therapy and to minimize the emergence of HIV drug resistance. Procurement and supply management systems are improving but they are still weak resulting in frequent stock-outs of antiretroviral medicines, diagnostics and other consumables.

Countries need to speed up the scaling up of HIV treatment services while also emphasizing the preventive benefit of ART. Countries need to be more innovative in designing and implementing services that are focused and tailor made to meet the needs of eligible people living with HIV. Furthermore countries need to expand and replicate the best practices/experiences in their countries that have produced success and if necessary adopt best practices from other countries while taking into account the country specific context.

Approaches that will actively engage communities, especially men, and improve their access to HIV preventive, treatment and care services such as encouraging couples HIV testing need to be adopted. There is need to increase the level of awareness about the benefits of “knowing one’s HIV status” especially among men and adolescents as this is key to accessing early HIV treatment.

Retention of people is a challenge at each step in the HIV treatment cascade. Attrition rates are relatively high, and loss to follow up is an issue. Identifying, monitoring and addressing individual and programmatic challenges at each stage of the treatment cascade may help improve retention rates.

Progress is being made in the implementation of TB/collaborative activities in the region. However, most countries are far from attaining the 100% targets with regards to testing of TB patients for HIV, and screening of people living with HIV for TB. Coverage rates of isoniazid preventive therapy among eligible people living with HIV are particularly low. The integration of HIV interventions and services including antiretroviral therapy into other related health programmes such as TB, maternal, child and infant health care, adolescent and reproductive health, STI control needs to be strengthened.

The use of new technologies such as XpertMTB/RIF and CD4 point of care needs to be rolled out while taking into account the country context. The move towards viral load testing as the preferred approach to monitoring the success of ART and diagnosing treatment failure, in addition to carrying out clinical and immunological (CD4) monitoring of people receiving ART, requires the building the necessary capacity in countries. There is need to lobby for reduced prices for some of these new technologies and for further reduction of prices of antiretroviral medicines and other related commodities as countries intensify efforts to scale-up HIV treatment and TB/HIV collaborative activities.

Greater investment in health systems strengthening to address the implications of implementing the 2013 WHO guidelines on antiretroviral treatment will be required. Countries will need to scale-up implementation of HIV treatment, care and support services while ensuring high quality of the services being provided in order to move towards the set regional targets.

# REFERENCES

1. UNAIDS. *UNAIDS Global Report on the global AIDS epidemic 2013*. 2013. UNAIDS, Geneva.
2. WHO. *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Recommendations for a Public Health Approach June 2013*. 2013. WHO, Geneva
3. WHO/UNICEF/UNAIDS. *Global Update on HIV treatment 2013: Results, Impact and Opportunities*. June 2013. WHO, Geneva. [http://www.who.int/iris/bitstream/10665/85326/1/9789241505734\\_eng.pdf](http://www.who.int/iris/bitstream/10665/85326/1/9789241505734_eng.pdf)
4. Rosen, S., and Fox MP. *Systematic review of preART retention in care in Africa.2011*. PLoS Med Juylesl;8(7):e1001056 doi:10.1371/journal.pmed.1001056.Epub 2011 Jul 19. Accessed 4 Oct 2013
5. Fox, MP and Rosen, S. *Patient retention in antiretroviral therapy programmes upto three years on treatment in Sub-Saharan Africa, 2007-2009: Systematic review*. 2010. Trop Med Int Health, 15 Suppl 1:1-15. doi:10.1111/j.1365.2010.02508.X., accessed 4 Oct 2013
6. Somi,G., Keogh,SC., Todd, J., et al. *Low mortality risk but high loss to follow among patients in the Tanzania national HIV care and treatment programme*. 2012. Trop Med Int Health April 17(4):497-506 doi:10.1111/j.1365-3156.2011.02952.x.Epub 2012 Feb1, accessed 4 Oct 2013
7. WHO. *Global Tuberculosis Report 2012*. 2012 WHO Geneva. ISBN 978 924 156450 2
8. WHO. *Global Tuberculosis Report 2013*.2013. WHO, Geneva.
9. WHO. *Global Plan to Stop TB 2011-2015*. [http://www.sroptb.org/assests/documents/global/plan/TB\\_GlobalPlanTostopTB2011-2015.pdf](http://www.sroptb.org/assests/documents/global/plan/TB_GlobalPlanTostopTB2011-2015.pdf), accessed 7 Oct 2013
10. WHO. *WHO Global Strategy for the surveillance and monitoring of HIV drug resistance 2012*. 2012. WHO, Geneva.
11. WHO. *WHO HIV Drug Resistance Report 2012*. 2012 WHO Geneva.
12. Johnson LF., Mossong J., Dorrington RE., et al. *Life expectancies of South African adults starting antiretroviral treatment. Collaborative analysis of cohort studies*. 2013 PLoS Med 10 (4):e1001418. Doi:1371/journal.pmed.1001418.Epub 2013 April 19
13. Andrea Low, Georges Gavriidis, Natasha Larke., et al. *Impact of antiretrovirals on the incidence of opportunistic infections in resource limited settings: a systematic review and meta analysis*. Poster at the 7<sup>th</sup> IAS conference in Kuala Lumpur, Malaysia. [www.who.int/entity/hiv/events/2013/IAS\\_poster\\_ARVoport.pdf](http://www.who.int/entity/hiv/events/2013/IAS_poster_ARVoport.pdf) accessed 8 Oct 2013
14. WHO/AFRO. *WHO Regional Committee for Africa Resolution AFR/RC59/R7 Call for intensified action for HIV prevention and TB/HIV co-infection control in the African Region*. <http://www.afro.who.int/en/fifty-ninth/session.html> , accessed 4 Oct 2013
15. Ayles H., et al. *Effect of household and community interventions on the burden of TB in southern Africa.: the ZAMSTAR community randomized trial*. Lancet, 1 August 2013 doi.10.1016/S0140-6736 (13)61131-9
16. South Africa. *National Strategic Plan on HIV, STIs and TB 2012-2016.*, accessed 4 Oct 2013 <http://www.info.gov.za/view/downloadfileAction?id=155622>
17. WHO. *Global Health Sector Strategy on HIV/AIDS 2011-2015.2011*. WHO, Geneva.



## 7. LOOKING FORWARD

Substantial progress has been made in scaling up HIV prevention, treatment, care and support interventions and services in the WHO African Region in the last decade. This has resulted in declines in new HIV infections and AIDS related deaths. Significant reductions in HIV prevalence have occurred especially among young people aged 15-24 years; a proxy for reduction in HIV incidence (1). The linkage between changes in sexual behaviour, especially among young people, and the declining incidence and prevalence in HIV infection, the dramatic reduction of new HIV infections among children as a result of PMTCT programmes, and the reduction in AIDS related deaths all make a compelling case for further intensifying the fight against the HIV/AIDS epidemic in the region.

Voluntary medical male circumcision which reduces the risk of HIV infection in men, in their female partners and also reduces HIV incidence in populations is being rolled out in 14 priority countries in the region (2). An impressive 1,710,531 voluntary medical male circumcisions were performed in 2012 alone in the priority countries, more than double the number performed in 2011. Kenya and Ethiopia have so far reached coverage of about 60% of the 80% target required for a public health impact on HIV incidence (3). However, coverage in several countries remains low. Task shifting,

the use of non-invasive surgical devices for male circumcision, more engagement and mobilization of communities, increased financial and human investments in VMMC programming in particular and in health systems strengthening in general will be required to increase the pace of delivery of VMMC services.

With the use of multiple and innovative models and approaches, uptake of HIV testing and counselling services has improved in the region. This has contributed significantly to enabling people living with HIV to access antiretroviral therapy. Further decentralization of HIV testing and counselling services and the use of innovative models and focused and targeted approaches will enable more people to know their status and access HIV prevention, treatment and care services. Community mobilization to increase the level of awareness of the benefits of “knowing one’s HIV serostatus” needs to be intensified.

More than 7.5 million adults and children were receiving antiretroviral therapy in the WHO African Region as of December 2012, an increase of more than 90% between 2009 and 2012 (1). The expansion of antiretroviral therapy has been more impressive in southern and eastern African countries. Nine countries - Botswana, Eritrea, Kenya, Namibia, Rwanda, Swaziland, South Africa, Zambia and Zimbabwe - had attained universal



access to antiretroviral treatment ( 80% coverage) based on the 2010 WHO ARV guidelines. These remarkable gains should inspire other countries that are lagging behind to scale up their antiretroviral therapy programmes in order to achieve the 2015 targets.

Good progress has been made in the expansion of PMTCT services in the region. There was a marked decline of 35% in new HIV infections among children between 2009 and 2012, demonstrating that elimination of HIV new infections among children by 2015 is feasible (1). Sixty three per cent of pregnant women living with HIV received antiretrovirals for the prevention of mother to child transmission in 2012, an increase from 9% in 2005 (4,5). Countries that had attained Universal Access according to the 2010 WHO guidelines need to keep the momentum going and those lagging behind need to redouble their efforts and rapidly increase access to PMTCT services.

HIV surveillance systems have generally improved over time with many countries conducting national population based surveys to complement HIV sentinel surveillance among pregnant women attending antenatal care (ANC). More countries have expanded their ANC sentinel HIV surveillance to improve rural and urban representation (6). However, the conduct of HIV sentinel surveillance among ANC attendees in the last few years has become inconsistent in several countries. HIV surveillance in key populations is improving (7) and it is expected that countries will improve on this. On the other hand, STI surveillance, including

reporting on syphilis screening results among ANC attendees, remains weak in many countries. Building stronger HIV surveillance and other health information systems, including vital registration, is essential to monitoring and guiding the national HIV response.

In going forward, the adoption of Resolution AFR/RC63/R7 “The 2013 WHO Consolidated Guidelines on the Use of Antiretroviral Drugs for treating and preventing HIV Infections; Recommendations for a Public Health Approach- Implications for the African Region” by African Ministers of Health in September 2013 provides the policy framework for countries in the WHO African Region (8).

The Resolution calls on countries to:

- (a) to adapt their national antiretroviral therapy guidelines and related service delivery tools to the new WHO consolidated guidelines on the use of ARVs according to the specific context of each country;
- (b) to increase investment in the HIV response by mobilizing adequate domestic resources including intensifying efforts to achieve the Abuja Declaration target of allocating 15% of national budgets to the health sector, and actively advocating for and seeking additional international funding from sources such as multilateral and bilateral agencies;
- (c) to address the human resource implications of implementing the new ART guidelines including organizing refresher training courses, mentoring and supervising health care providers,

adopting task-sharing policies, and strengthening HIV/AIDS care and treatment in existing pre-service courses in line with country policies;

- (d) to improve procurement and supply of drugs and other commodities including updating their national essential medicines lists to include the newly recommended ARV regimens, diagnostics and commodities;
- (e) to scale up early infant diagnosis (EID) services and interventions in order to increase access and coverage of ART for children;
- (f) to integrate and link HIV services with sexual and reproductive health, child health, nutrition and TB services and other related services at different levels of the health system and to decentralize HIV services in order to increase opportunities for initiating ART;
- (g) to promote awareness and uptake of HIV testing in the general population, key population groups and among all care seekers and ensure that all HIV-positive individuals are identified and enrolled in early treatment and care;
- (h) to improve access to diagnostics and viral load testing through the use of point-of-care technologies;

In taking actions on the above, countries have the responsibility of ensuring that health systems have the capacity to deliver services. Governments should ensure stewardship and leadership, and forge partnerships with civil society and PLWHIV for developing plans. They

also have to mobilize and allocate the necessary human, material and financial resources for implementation, including both internal and external resources for accelerating HIV/AIDS interventions. Governments should ensure effective coordination of interventions. The health sector should provide technical guidance for the implementation of this updated HIV strategy, within the framework of intersectoral collaboration in the multisectoral response. Countries should develop appropriate policies and tools, update their strategic plans for Universal Access, implement planned activities, monitor programmes, and coordinate all partners.

In its technical cooperation with countries, the World Health Organization will continue to provide technical leadership and normative guidance for developing plans of action, implementing programmes, monitoring and evaluation. WHO and other partners, including UNAIDS and other UN agencies, PEPFAR, the Global Fund, Bill and Melinda Gates Foundation, and bilateral and multilateral donors should provide harmonized support to countries in resource mobilization, planning, and strengthen national government capacity to implement and coordinate the national efforts.

With intensified efforts, speed and innovation, countries in the WHO African Region can attain the 2015 HIV targets and move towards an “AIDS- Free Generation”.

# REFERENCES

1. UNAIDS. Global Report on the global AIDS epidemic 2013. 2013 UNAIDS, Geneva.
2. WHO/UNAIDS and UNICEF. *Global HIV/AIDS Response epidemic update and health sector progress towards Universal Access progress report 2011*. WHO, Geneva. 2011.
3. WHO/AFRO. *Progress in scaling up voluntary medical male circumcision for HIV prevention in East and Southern Africa January–December 2012*. July 2013 (Draft). WHO/AFRO, Brazzaville
4. WHO/AFRO. *HIV in the WHO African Region Progress towards achieving Universal Access to priority health sector interventions 2011 Update*. 2011. WHO/AFRO, Brazzaville.
5. UNAIDS HIV/AIDS database 2013
6. Garcia-Calleja JM, E Zanlewski, P D Ghys., et al. *A global analysis of trends in the quality of HIV serosurveillance*. Sex transm 2004; 80 (Suppl.1) :125-134
7. Jacobson J. *HIV surveillance of key populations in Sub-Saharan Africa*. 29 September 2013. Draft version 1.0 (in press)
8. WHO/AFRO Regional Committee for Africa. Resolution AFR/RC63/R7. The WHO Consolidated Guidelines on the Use of Antiretroviral Drugs treating and Preventing HIV infection; Recommendations for a Public Health Approach; implications for the African Region (Doc AFR/RC63/12). WHO/AFRO Congo, Brazzaville. 6 September 2013

# ANNEXES

## Annex 1: ART facilities in the WHO African Region

Subregion	Reporting year	Total	Public	Private	Hospital	Health centre	ANC	STI	TB service
Southern Africa	Botswana	280	280		34				
	Comoros	4	4	0	3	0	0	0	1
	Lesotho	197	169	28					
	Madagascar	47	45	2	47				
	Mauritius	6	6	0	4	1	0	0	
	Mozambique	316	316		52	264			
	Namibia	181	181						
	South Africa	3,683	3,574	109					
	Swaziland	125	101	24	8	5	0	0	0
	Zambia	564	524	40	113	451	564	564	564
	Zimbabwe	982	976	6	164		982	982	982
Eastern Africa	Eritrea	20	18	2	20	0	0	0	0
	Ethiopia	866	821	32	181	685			
	Kenya	1,829	1,678	149					
	Malawi	651	581	70					
	Rwanda	430			42	367		430	430
	Seychelles	2	2	0	1	1	0	0	0
	South Sudan	22	22						
	Uganda								
	United Republic of Tanzania	1,380	766	33	163	384			
	Central Africa	Angola	284	278	6				
Burundi		132	78	54	49	50	99	99	99
Cameroon		155	109	43					
Central African Republic									
Chad		67	60	7	59	8			
Congo									
Democratic Republic of the Congo									
Equatorial Guinea		6	4	2		2			
Gabon		23	18	5	9	14	0	0	0
Sao Tome and Principe		10	10	0	1	8	1	0	0
Western Africa	Algeria	9	9	0	9	0	0	0	0
	Benin	82	81	1					
	Burkina Faso	99	81	8					
	Cape Verde	35	35	0	5	25	5	0	0
	Côte d'Ivoire	529							
	Gambia		6	4	4	6			
	Ghana	162	146	16					
	Guinea	46	34	10	32	10			2
	Guinea-Bissau	35	32	3	8	24	0	0	1
	Liberia	44	32	12	31	7	6		
	Mali								
	Mauritania	4	4	0	4				
	Niger	28	24	4	22	0	0	0	1
	Nigeria	516	457	59					
	Senegal		117	5	28	77		1	
	Sierra Leone	131							
	Togo	141	70	67	41	100			

Annex 2: Selected indicators in TB-HIV collaborative activities, WHO African Region, 2001-2012

Countries	No. of TB patients tested for HIV										No. of TB patients found positive					HIV-positive TB patients started or continued on co-trimoxazole preventive therapy (CPT)					HIV-positive TB patients started or continued on antiretroviral therapy (ART)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
WHO AFRICAN REGION	664,034	816,338	888,765	1,013,342	1,040,262	312,218	370,245	394,332	465,647	443,558	228,987	284,977	319,175	382,560	346,680	93,729	134,88	172,265	220,639	243,012					
Algeria																									
Angola	2,023	2,434	5,107	12,022	12,022	306	633	789	1,149	1,149	42	700	789	1,149	1,149	29	700	789	1,149						
Benin	3,802	3,845	3,774	4,259	4,006	653	633	727	637	637	636	623	573	709	261	276	340	537							
Bosswana	6,120	6,795	6,147	6,545	5,940	4,149	4,415	4,018	4,129	3,759	1,310	1,379	3,172	2,544	3,374	1,310	1,610	1,720	2,206	2,450					
Burkina Faso	4,308	4,602	4,761	4,944	4,567	948	903	839	829	671	925	877	824	805	647	489	483	503	580	503					
Burundi	526	3,625	5,511	4,817	5,734	243	1,305	1,260	1,036	1,076	61	617	1,196	984	1,009	33	423	509	502	588					
Cote d'Ivoire	17,201	17,253	16,991	18,297	20,663	5,073	5,207	4,112	4,820	5,482	3,036	3,674	3,282	3,843	4,092	1,140	1,633	1,118	1,725	2,396					
Cameroon	17,885	18,218	19,117	20,280	20,810	7,211	7,383	8,314	7,731	7,747	4,268	6,343	6,740	6,754	6,432	2,571	3,715	4,235	4,758	4,261					
Cape Verde	282	352	378	47	45	47	45	47	45	45	47	45	47	45	45	47	45	47	45	44					
Central African Republic	3,749	2,638	1,890	3,839	3,839	862	733	1,483	960	960	808	733	1,483	960	960	372	427	534	68	290					
Chad	3,801	4,124	4,766	4	4	663	959	663	959	960	148	350	372	4	4	299	297	408	626						
Comoros	110	117	119	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					
Congo	180	2,357	4,106	2,247	1,979	36	99	757	687	653	36	2	22	166	132	36	2	22	179	152					
DRC	21,856	31,312	28,997	30,636	35,097	3,932	6,126	5,273	4,942	5,748	1,671	2,783	1,262	2,645	3,485	724	1,296	489	1,118	2,296					
Equatorial Guinea	741	331	786	911	225	234	234	234	234	234	17	191	191	191	191	66	69	50	50	50					
Eritrea					1,913					164															
Ethiopia	33,021	56,040	66,955	65,140	96,245	7,891	11,098	9,809	5,442	9,819	5,262	7,516	6,723	3,348	3,619	3,494	4,515	3,823	2,123	8,022					
Gabon	966	1,130	1,130	2,252	5,415	613	667	667	578	852	303	348	348	348	303	348	348	348	559	559					
Gambia	1,578	2,045	1,962	1,726	1,859	294	326	224	290	302	209	209	209	294	294	52	35	103	146	146					
Ghana	7,373	9,870	10,147	12,587	11,825	1,630	2,218	2,676	2,907	2,812	1,414	1,601	2,065	2,085	2,029	384	531	487	812	1,033					
Guinea	1,020	5,444	5,776	6,548	7,575	197	1,288	1,483	1,670	1,859	191	520	1,288	1,206	1,544	47	84	614	812	903					
Guinea-Bissau	543	664	1,046	1,037	1,322	250	268	396	431	517	208	208	208	208	208	208	208	208	208	208					
Kenya	91,463	96,676	96,930	97,136	92,890	41,174	42,294	40,069	38,175	35,837	37,757	38,989	39,952	37,147	35,025	12,426	14,250	19,331	24,497	26,487					
Lesotho	9,008	10,563	11,005	11,413	10,476	6,830	8,084	8,459	8,519	7,878	5,592	7,636	8,131	8,131	7,637	1,857	2,235	2,273	5,756	4,171					
Liberia	4,002	5,964	4,355	5,661	64	72	333	454	454	772	32	30	24	120	693	25	35	42	115	115					
Madagascar	6,471	2,176	16,439	15,532	14,146	9	7	39	40	19	13,143	12,723	11,771	9,209	9,928	5,230	6,154	5,718	6,165	9,144					
Malawi	21,557	21,041	19,855	17,334	19,009	13,687	13,558	12,476	10,341	11,296	425	41	585	314	290	179	61	217	278	425					
Mali	3,041	3,760	2,303	1,963	1,544	452	585	416	404	425	41	585	314	290	179	61	217	278	425						
Mauritania	52	281	608	12	52	52	27	90	12	52	52	52	52	52	52	52	52	52	52	52					
Mauritius	101	110	117	108	125	10	7	8	8	10	5	7	8	8	10	5	5	6	5	9					
Mozambique	32,182	38,087	40,554	43,096	47,960	19,330	25,056	24,574	26,538	27,979	17,733	22,183	23,738	24,095	27,319	5,816	5,622	6,250	7,661	15,391					
Namibia	9,188	9,849	9,534	10,042	9,927	5,718	5,676	5,227	4,990	4,688	5,289	4,434	4,869	4,909	4,656	2,019	1,995	2,294	2,700	3,362					
Niger	2,243	2,424	4,925	4,710	5,166	320	403	405	334	431	143	95	149	22	135	-	-	16	69	69					
Nigeria	56,053	70,693	71,844	75,772	82,641	15,301	18,087	17,736	19,553	19,342	3,991	8,761	10,415	13,301	15,565	6,889	7,026	5,902	8,410	10,866					
Rwanda	7,510	7,448	6,914	6,560	6,131	2,560	2,529	2,199	1,855	1,601	2,219	2,329	2,137	1,794	1,586	1,534	1,587	1,587	1,395	1,395					
Sao Tome and Principe	69	79	112	146	126	6	10	13	15	18	6	10	12	15	18	3	3	7	15	18					
Senegal	5,963	6,906	8,018	8,757	10,048	601	455	776	877	882	424	386	657	749	793	206	123	289	421	561					
Seychelles	6	15	17	21	21	-	3	1	4	3	-	3	1	3	2	-	3	1	4	3					
Sierra Leone	7,949	8,625	9,718	10,159	11,655	920	987	976	902	1,343	73	62	229	344	344	127	190	253	931	931					
South Africa	150,542	197,448	213,006	322,732	294,196	89,950	114,523	128,457	211,128	190,093	64,348	80,954	94,835	161,561	140,868	22,107	48,314	69,959	97,355	101,937					
Swaziland	9,635	10,730	9,536	8,419	7,363	8,081	8,889	7,788	6,480	5,666	7,624	8,386	7,243	6,138	5,559	1,929	2,315	2,726	3,283	3,762					
Togo	512	1,734	2,242	2,513	2,657	162	342	632	667	625	55	254	455	515	541	49	122	312	449	476					
Uganda	27,695	31,695	36,742	39,394	40,581	16,432	17,131	19,836	20,725	20,376	12,765	14,731	17,855	19,270	19,163	3,569	3,766	4,782	6,720	9,962					
Tanzania	48,846	56,388	56,849	53,842	52,499	19,940	21,541	21,662	20,632	20,269	16,400	19,076	19,855	19,604	19,501	5,918	6,684	7,572	7,741	10,993					
Zambia	30,654	34,992	40,704	48,594	45,269	20,839	23,584	26,571	26,737	24,309	9,645	15,041	19,845	23,144	22,614	8,604	10,009	12,646	14,213	14,471					
Zimbabwe	22,062	28,952	41,062	37,029	34,212	16,619	22,745	31,849	27,562	23,957	12,402	20,993	27,902	25,965	6,301	4,630	8,668	14,223	16,577	4,419					

