

# From HIV testing to lifelong care and treatment

Access to the continuum of HIV care and treatment  
in the Eastern Mediterranean Region

Progress report 2014



**World Health  
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Regional Office for the Eastern Mediterranean



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Cover photo shows clients outside the HIV mobile testing and counselling unit of Association Marocaine de Lutte contre le Sida (ALCS) in Larache, Morocco.

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# Contents

<b>Acknowledgements</b>	4
<b>Executive summary</b>	5
<b>1. Introduction</b>	9
<b>2. Methodology and limitations</b>	15
<b>3. Findings: the HIV continuum of care cascade</b>	19
3.1 HIV testing and counselling	21
3.2 Linkage to ART (and pre-ART) care, support and treatment	31
3.3 ART treatment	35
3.4 Monitoring the quality of ART care	44
<b>4. Issues affecting effective implementation and scale-up</b>	53
4.1 Essential laboratory and diagnostics for HIV care	55
4.2 Cost of ARV drugs	57
4.3 Procurement and supply systems	59
4.4 Stigma/discrimination and its impact on HIV testing and ART scale-up	59
<b>5. Syntheses</b>	61
<b>6. The way forward: the regional initiative to end the HIV treatment crisis</b>	65
6.1 Conclusion	67
6.2 Actions to operationalize the regional initiative to end the HIV treatment crisis	67
6.3 Actions to support Member States	68
<b>Annex 1. Summary of selected demographic and HIV epidemic indicators, by country, 2013</b>	71
<b>Annex 2. Estimated number of people living with HIV (PLHIV) needing ART and coverage, by country, 2013</b>	73
<b>Annex 3. Country fact sheets</b>	75
<b>References</b>	98

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# Executive summary

## Introduction

There is concrete evidence that antiretroviral therapy (ART) has the dual benefit of improving health and preventing HIV transmission. Adopting the new 2013 WHO consolidated guidelines on the use of antiretroviral (ARV) drugs for treating and preventing HIV infection towards universal access will mean greater numbers of lives saved, as well as a probable reduction in HIV transmission in the community.

The WHO Eastern Mediterranean Region is facing a treatment crisis. ART coverage in the Region was only 10% in 2013, and is the lowest in the world. Although overall treatment access has increased, the unmet need continues to grow, exacerbated by the expanding HIV epidemics in the Region. New infections, fuelled by sexual transmission and injecting drug use, have increased by approximately 55% in the last decade.

In 2013, the WHO Regional Office for the Eastern Mediterranean launched a regional initiative to “End the HIV treatment crisis” with the vision of scaling-up access to treatment to achieve universal coverage by 2020. The medium term objectives of the initiative are to accelerate treatment coverage and reach the regional target of ensuring that 50% of people living with HIV eligible for treatment receive ART by 2015. The roadmap for the regional initiative is provided by *Accelerating HIV treatment in the WHO Eastern Mediterranean and UNAIDS Middle East and North Africa regions*, a report which details key approaches to rapidly scaling-up treatment access and ending the HIV treatment crisis in the Region.

## Methodology

This progress report provides the status of access to the continuum of HIV care in the WHO Eastern Mediterranean Region. The methodology used included desk reviews of the current situation, issues and vulnerabilities that affect access to HIV care and treatment. The framework for analysis follows the HIV care continuum from testing to enrolment in care, ART initiation and achieving viral suppression.

Data in this report is based on information submitted by countries for the Global AIDS Response Progress Reporting (GARPR), Spectrum estimates, the WHO global ARV surveys, United Nations General Assembly Special Session on HIV/AIDS (UNGASS) country narrative reports and other publicly available documents. Detailed contextual information on the HIV care and treatment cascade was available from country analyses conducted in 2013 in Pakistan, Somalia and Sudan.

## Results

**HIV testing and counselling (HTC).** Although the numbers of people taking an HIV test in the Region nearly doubled between 2011 and 2012, access to, and availability of, HIV testing services remained low in most countries. Testing services were geographically restricted to areas with higher population density or within tertiary or secondary health facilities. Low uptake and utilization by individuals at higher risk of HIV infection such as key populations at higher risk of HIV exposure and their partners contributes to the lack of cost-effectiveness of testing services in the Region. Several countries conduct mandatory



testing of specific categories of people as the main testing strategy, although data show that this approach tests many, but detects few HIV positive individuals, and misses out on identifying people at higher risk of HIV infection. There is little client-initiated HIV testing. Most individuals are referred by nongovernmental organizations or health care providers as the current testing and counselling models in the Region rely primarily on traditional static or site-based voluntary HIV counselling and testing (VCT) (services linked or integrated within health facilities or nongovernmental organisation centres. Diversification of testing approaches, including community-based strategies, has been implemented in several countries, mainly as part of interventions for key populations, but coverage is limited. Provider-initiated testing and counselling (PITC) policies are now established in most countries for antenatal (ANC) settings and tuberculosis (TB) services, but not for patients attending sexually transmitted infection (STI) services. Specifically, partner and couple testing is a key gap area within the Region.

The aim of national counselling and testing programmes is to identify people living with HIV infection as early as possible after infection and linking them into prevention, care and treatment services. In many countries, more than 50% of newly-diagnosed adults have CD4 counts of less than 350 cells/mm<sup>3</sup> and are eligible for ART initiation. Significant barriers to HIV testing access that are structural, cultural, social and emotional (patient factors) lead to late diagnosis in many countries, resulting in worse health outcomes and high risk of death.

**Linkage to pre-ART and ART care.** There is inadequate data on linkage to care after the individual is diagnosed as HIV infected. Little is known about when people diagnosed with HIV infection at HTC services actually arrive and register at ART services, or the length of the period between registration with ART clinics and initiation of ART (pre-ART care). Cascade analyses in Somalia and Sudan found that approximately 70% and 81%, respectively, of people diagnosed with HIV had ever enrolled in ART services. Once people are enrolled with ART facilities, the costs of follow-up care, poor clinic experience and not having a direct “meaningful” medical intervention (benefit), such as routine CD4 counts and ART initiation, are key factors influencing attrition from pre-ART care. These issues are amplified for key populations.

**ART treatment.** There has been progressive and incremental increase in the numbers of people receiving ART in the Region between 2011 and 2013. However, the burden of unmet ART need continues to grow. Five countries bear the highest burden of people living with HIV in the Region: Islamic Republic of Iran, Morocco, Pakistan, Somalia and Sudan. They account for 87% of the estimated 194 000 people who require ART, based on national HIV eligibility criteria in 2013. Coverage varies widely among countries, with Djibouti and Morocco achieving 28% and 21%, respectively, while the unmet need for treatment remains high in others.

With the launch of the 2013 WHO consolidated guidelines, the majority of countries in the Region plan to adopt recommendations for earlier treatment in adults and children. Most countries are implementing or plan to provide lifelong triple ARV combination regimens (option B+) to HIV positive pregnant women. For individuals within serodiscordant relationships, many countries plan to provide ART irrespective of CD4 count to maximize both health and prevention benefits.

The overwhelming majority of people on treatment in the Region are receiving first-line regimens. However, lack of access to, and availability of, CD4 count and viral load testing is common and it is



probable that many patients receiving first-line treatment are not adequately assessed for treatment failure and for switching to second-line regimens.

In children, information on ART need is inadequate. Somalia and Sudan bear the greatest burden with 3100 and 3300 children requiring treatment, respectively. Access to treatment for children improved in 2013, although children accounted for only 3.3% of all people receiving ART in 2013. Nearly all countries provided ART to children and several countries also reported treatment among children younger than three years old, the age-group most vulnerable to poor health outcomes and death in the absence of intervention. Nevertheless, the overall regional ART coverage of 7% in children is low. Lack of early infant diagnosis and strong prevention of mother-to-child transmission (PMTCT) programmes integrated with essential maternal and child health services is a key gap in many countries.

**Quality of ART care including retention.** ARV drug stock out is not commonly reported in the Region. However, disruption of drug supplies for one or several drugs often occurs and countries have instituted various interim strategies to maintain patients on treatment. This, however, results in numerous changes in treatment regimens, increased costs for returning for frequent drug refills, and sharing of ARV drugs, and may impact patient adherence to ART. Weak procurement and supply management contribute to the fragility of health services in several countries and loss from the treatment cascade, as well as increasing the risk of the emergence of HIV drug resistance.

Of the 17 countries that provided data on retention for the reporting periods 2010–2011 and 2012–2013, only six countries achieved the WHO-recommended minimum of 85% of patients still retained in care at 12 months of treatment in 2013. High attrition rates, either due to death or loss to follow-up occurred in Sudan and Yemen, where only six out of 10 patients who initiated ART were still retained after 12 months of treatment. Longer-term retention rates at 24 months of treatment show wide variability among countries, but generally mirrors the global experience of gradual attrition over time.

There is little data on viral load suppression among people receiving treatment in the Region as many countries lack laboratory capacity. HIV drug resistance surveillance and monitoring in the Region are not yet established in most countries.

## Conclusion

The Region has made incremental progress during the last few years in expanding access to ART. The planned changes in national policies, in line with the recommendations of the 2013 WHO consolidated guidelines, will support expansion of access to HIV testing and ART. However, there are still considerable challenges to overcome towards the mid-term objective of 50% ART coverage by 2015 and universal access by 2020. A number of actions are proposed for countries to operationalize the regional initiative to end the HIV treatment crisis.



01

Introduction



# 1. Introduction

Global antiretroviral therapy (ART) access has continued to expand with approximately 12.9 million people receiving treatment at the end of 2013, more than four-fifths of the 2015 global treatment target of reaching at least 15 million people by 2015 (1). This was an increase of over two million people receiving ART in one year (2). The dual benefits of ART, including prevention of HIV transmission and its health impact, have become more apparent. Trajectories of national HIV epidemics may potentially be reduced through ART scale-up as viral loads within communities are lowered and HIV transmission is prevented. Estimated annual global new infections could reduce from 2.4 million people in 2011 to 800 000 in 2025 (compared to the predicted 1.25 million based on the 2010 treatment guidelines), if countries achieve the 80% ART coverage<sup>1</sup> recommended by the 2013 WHO consolidated treatment guidelines (3,4). According to the 2013 consolidated guidelines treatment criteria, about 85% of all people living with HIV are eligible for ART (1).

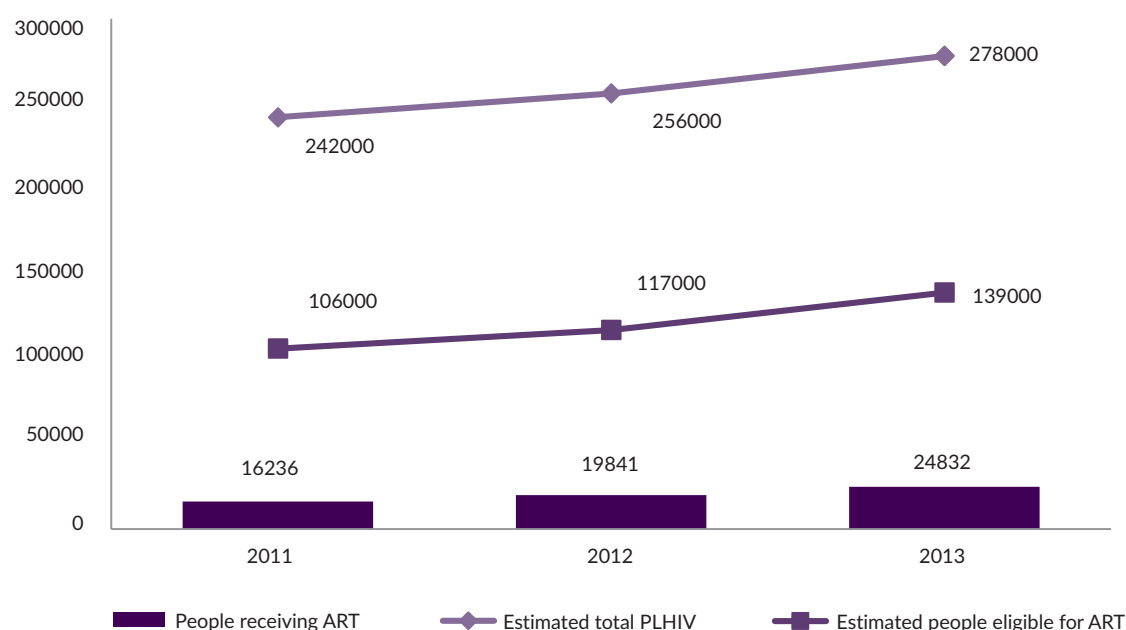
Although the numbers of people receiving ART increased in the WHO Eastern Mediterranean Region between 2011 and 2013, ART coverage<sup>2</sup> overall is only 10% (7–15%) and was the lowest in the world in 2013 (1). In Afghanistan, Islamic Republic of Iran, Pakistan, Somalia and Sudan, less than 1 in 10 of those eligible for ART according to national HIV guidelines are receiving it. HIV-related deaths in the Region increased by 138% between 2001 and 2012(5), while the unmet need for ART continues to grow. In 2013, 24 832 people (adults and children) were receiving ART, out of an estimated 278 000 people living with HIV (low- and middle-income countries only) (Fig. 1).

The HIV treatment crisis is exacerbated by expanding epidemics within the Region, which comprises 22 highly diverse countries with regards to demographics, social and economic progress and HIV epidemiology (Annex 1). New infections, fuelled by sexual transmission and injecting drug use, have increased approximately 55% from 22 000 (17 000–31 000) to 34 000 (24 000–46 000) in the past ten years (6). Overall HIV prevalence above 1% (a “generalized epidemic”) among lower-risk populations are found in Djibouti and some parts of Somalia. In 10 countries, there is evidence of emerging or increasing epidemics concentrated in one or all of the key populations, such as people who inject drugs, men who have sex with men (including transgender people) and sex workers (7).

Among people who inject drugs, the highest documented HIV prevalences are noted in Libya (87.0% in Tripoli, 2011), Islamic Republic of Iran (15.0%, 2011), Pakistan (3.3–52.5% per city, 2011) and Afghanistan (0.3–13.3% per city, 2012). In men who have sex with men, HIV prevalences of 0–16.0% (2011) have been reported in Tunisia, Egypt (6.9% in Alexandria) and Sudan (0–6.3% per city, 2011). Among sex workers, the highest sero prevalence levels have been found in Libya (16.0% in 69 women, Tripoli, 2011) and Djibouti (15.4%, 2009), followed by Sudan (0–7.7% per city, 2011)(7). A recent systematic review of biological and behavioural data among people who inject drugs in the Middle East and North Africa noted that there was robust evidence of growing HIV epidemics among this key population in multiple countries, with likely hidden epidemics in countries that lack adequate data (8).

<sup>1</sup>Universal access to ART treatment.

<sup>2</sup>Definitions for 2014 Global AIDS Response Progress Reporting (GARPR) changed from those used in 2012. In order to facilitate comparison between countries on ART access (coverage), while recognizing that countries are at different stages of adapting and operationalizing the 2013 WHO treatment recommendations, ART coverage in this report is expressed as a percentage of the estimated total number of people living with HIV. Coverage numbers will be lower compared to those using the number of people eligible for ART, according to national HIV eligibility criteria, as the denominator.



Source: Data from UNAIDS Spectrum estimates and GARPR. Data includes Afghanistan, Djibouti, Egypt, Islamic Republic of Iran, Morocco, Pakistan, Somalia, Sudan, Tunisia and Yemen. Data for estimated number of people eligible for ART extrapolated for Pakistan and Afghanistan for 2011–2012.

**Fig. 1. The treatment gap: estimated total number of people (adults and children) living with HIV, eligible and receiving ART in selected low and middle-income countries in the WHO Eastern Mediterranean Region, 2011–2013**

In 2013, the WHO Regional Office for the Eastern Mediterranean launched a regional initiative to “End the HIV Treatment Crisis” with the vision of scaling-up treatment access to achieve universal coverage by 2020. The medium term objectives are to accelerate treatment coverage and reach the regional target of ensuring that 50% of people living with HIV (PLHIV) eligible for treatment receive ART by 2015. This implies an additional 15% of PLHIV provided with treatment per year in 2014 and 2015. The regional advocacy report *Accelerating HIV treatment in the WHO Eastern Mediterranean and UNAIDS Middle East and North Africa regions*, developed by WHO and UNAIDS, details a road map for the rapid scale-up of treatment access and an end to the HIV treatment crisis in the Region (Fig. 2) (5).

**The aim**

Unfolding a bold tailored initiative to increase access to HIV treatment in the Region, in line with the WHO 2013 consolidated antiretroviral guidelines and the Treatment 2015 initiative.

**The rationale**

The HIV treatment crisis in the Region is reversible. Implementing the recommended actions soonest will enable the Region to achieve universal coverage for HIV treatment.

**Commit to urgent action**

1. Set ambitious annual targets for HIV testing and treatment at national and local levels, monitor progress closely and take urgent remedial action if targets are not met.

**Create demand**

2. Implement bold action plans to overcome the stigmatization and discrimination in health services. 3. Adopt and implement rapid testing technologies that permit same-day test results. 4. Provide HIV testing services in community settings in order to reach key populations at higher risk of HIV exposure. 5. Normalize HIV testing in health-care settings by routinely offering it as a component of regular health care in appropriate services in antenatal care, tuberculosis, STI, drug prevention and treatment, and other relevant services. 6. Adopt, client-friendly, standardized, free-of-charge HIV treatment and care services to facilitate prompt linkage to care upon HIV diagnosis, earlier initiation of ART, treatment adherence and retention in care.

**Mobilize sustained investments**

7. Increase the share of domestic investment for HIV through sustainable and predictable financing mechanisms at country level. 8. Reduce costs associated with antiretroviral medicines, including expanded use of generic medicines, exploration of bulk purchasing and investments to build regional pharmaceutical manufacturing capacity. 9. Track and develop opportunities to increase the efficiency and effectiveness of testing, treatment and care activities, starting with an increased focus of resources on key populations specific for each country and locality. 10. Build community capacity to help design and support testing and treatment scale-up and to improve long-term treatment outcomes. 11. Develop health system capacity to deliver chronic care inclusive of HIV.

**Deliver results in an equitable manner**

12. Simplify treatment protocols and move towards fixed dose combinations with “one pill per day” regimens. 13. Offer ART, irrespective of immunological status, to the following groups of people living with HIV: those in discordant couples, pregnant and breastfeeding women, children aged five years and below, those with active tuberculosis and those with hepatitis B with severe chronic liver disease. 14. Avoid service interruptions as a result of stock-outs of medicines and laboratory supplies. 15. Strengthen and expand laboratory services for monitoring of the response to treatment, including CD4 and viral load monitoring. 16. Decentralize routine patient care and HIV treatment monitoring to selected primary care and community-based settings based on need assessment, with consideration to the involvement of both public and private providers. 17. Integrate HIV treatment and care in other health services such as mother, neonatal and child health services, tuberculosis clinics and drug use harm reduction services.



Source: Adapted from *Accelerating HIV treatment in the WHO Eastern Mediterranean and UNAIDS Middle East and North Africa regions* (5).

**Fig. 2. The framework for universal access to treatment by 2020 in the WHO Eastern Mediterranean and UNAIDS Middle East and North Africa regions, 2013**





02

Methodology  
and limitations



## 2. Methodology and limitations

This report provides the status of access to the HIV continuum of care in the WHO Eastern Mediterranean Region based on desk reviews, including on the current situation, issues and vulnerabilities that affect access to HIV care and treatment. The framework for analysis follows the HIV care continuum from HIV testing to enrolment in care, ART initiation and achieving viral suppression (2). As there are multiple factors and complexities influencing health access in the Region, a section on specific issues and barriers is included.

Data in this report is mainly extracted from information submitted by countries to UNAIDS and WHO for Global AIDS Progress Response Reporting (GARPR) and Spectrum estimates. Other sources of data include responses to the WHO global antiretroviral (ARV) surveys 2012, 2013<sup>3</sup> and 2014,<sup>4</sup> country-specific UNGASS narrative reports from 2010 to 2014 (9), the 2012 HIV surveillance report for the Eastern Mediterranean Region (7), and data from detailed HIV treatment cascade analyses in Pakistan<sup>5</sup> Somalia<sup>6</sup> and Sudan<sup>7</sup>. ART coverage definitions follow that of the 2014 GARPR guidelines. In order to facilitate comparison between countries on ART access (coverage), while recognizing that countries are at different stages of adapting and operationalizing the 2013 WHO treatment recommendations, ART coverage in this report is expressed as a percentage of the estimated total number of people living with HIV.

Several limitations exist because the review uses data submitted by countries which may vary in quality or in interpretation of indicators. One example is the number of people tested per year for CD4 counts or viral loads, which is generally reported as numbers of tests due to current country reporting mechanisms. Data presented in this report may not be representative of all individual countries in the Region due to the lack of, or incomplete, country responses to regional and global reporting mechanisms. Drawing overall conclusions for the Region in several areas was challenging because of the many socioeconomic differences among countries. Contextual information relied on the country-specific UNGASS narrative reports of 2010, 2012 and 2014 to provide a snapshot of issues and vulnerabilities, which may have evolved since reports were written. Lastly, there is a scarcity of published regional studies and research on HIV and ART which limits the evidence base in the Region.

<sup>3</sup>Includes Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Somalia, South Sudan, Sudan, Syrian Arab Republic and Yemen.

<sup>4</sup>Includes Bahrain, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Morocco, occupied Palestinian territories, Sudan, Syrian Arab Republic, Tunisia and Yemen.

<sup>5</sup>Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

<sup>6</sup>Ministry of Health, Somalia, unpublished data, 2013.

<sup>7</sup>Federal Ministry of Health, Sudan, unpublished data, 2013.



# 03

Findings: the HIV  
continuum of care  
cascade





## 3. Findings: the HIV continuum of care cascade

### 3.1 HIV testing and counselling

Diagnosis of HIV infection is the first step in the continuum of HIV care. HIV testing and counselling (HTC) services are the gateways where individuals are provided with essential prevention counselling and assessment of risk. Those who test HIV negative are given tailored counselling to reduce their risks, stay negative and get linked to prevention programmes. For people diagnosed HIV positive, these services are vital in creating the support network (such as referral for nongovernmental organization and peer support, extended support through home visits and outreach) and facilitating connection to HIV care and treatment. Critical to all testing and counselling services are the key principles of the “5Cs”: consent, confidentiality, counselling, correct test results and connection to prevention, care and treatment.

The primary objective of national programmes for HIV testing and counselling is the detection of HIV-positive people as early as possible after infection and linking them into prevention, care and treatment services, to ensure health well-being and reduce transmission of the virus. WHO recommends a mix of service delivery models and approaches to improve access to HIV diagnosis (10). In the Eastern Mediterranean Region where the HIV epidemics are mainly concentrated in key populations, HIV testing and counselling approaches should be prioritized for cost-effectiveness and to achieve maximum impact by identifying people who could benefit from treatment and linking people at higher risk of HIV infection with prevention interventions. With the youthful population profiles of most of the countries in the Region, the strengthening of HTC for adolescents and young people will be required (11).

#### 3.1.1 Availability, accessibility and utilization of services

There is limited data on the total numbers of HIV tests done, for client-initiated HTC or provider-initiated testing and counselling (PITC), in the Region. Based on data reported by six countries, between 2011 and 2012, the numbers of people taking an HIV test in the Region nearly doubled from 243 900 to 435 800 (2). However, access to, and availability of, HIV testing services remain low across most countries, particularly for individuals at highest risk. The median number of HIV testing facilities in the Region is 1.1 per 100 000 adult population, significantly less than the 8.2 per 100 000 population available in 104 low-and middle-income countries in 2010 (12). In 2013, several countries (Islamic Republic of Iran, Morocco, Pakistan, Somalia and Yemen) made significant progress through increasing the numbers of HIV testing facilities for client and provider-initiated testing, including use of rapid diagnostics particularly within community-based settings (9).

The shortage of testing services impacts identification of people living with HIV (Box 1). In many countries, HTC services are geographically restricted to areas where population density is higher or within tertiary or secondary (district) health facilities. Sudan estimates that only one out of five people who are HIV infected is aware of their status<sup>8</sup>.

While there are inadequate numbers of HTC services overall, most are also underutilized. Data from Sudan indicate that 45 675 tests were performed in 2012 at 143 HTC sites. Per site, this indicates an

<sup>8</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

### Box 1. Shortage of HIV testing and counselling facilities in Sudan

HIV testing and counselling (HTC) services are available in Sudan through multiple services serving different populations groups. These include outreach mobile testing services in rural and urban areas for the general population and in urban areas for individuals at higher risk, static HTC centres and PITC within health services (ANC and TB clinics).

Availability of testing services in the country is a challenge with only 32% of TB services providing PITC to an estimated 69 000 TB patients. Similarly, only 110 ANC clinics provide testing services for the estimated 899 000 annual pregnancies (about one testing service per 8200 pregnancies). Testing for key populations is available at ad hoc mobile HTC events organized by a handful of nongovernmental organizations and through referrals to static services. Testing among sexually transmitted infection (STI) patients is minimal, with only 80 people tested in 2012.

Source: Federal Ministry of Health, Sudan, unpublished data, 2013.

average of 319 tests per year, or less than one test per day. This was similar to tuberculosis (TB) and antenatal care (ANC) services, which had averages of 41 and 337 tests per service per year (about 3 and 28 tests per month, respectively). HTC services offered at eight tertiary and district hospitals in Punjab province, Pakistan, conducted only 4000 tests in 2012. The low volume of testing, averaging 40 tests per month per HTC site is indicative of a low uptake of testing. Most people are referred to HTC by nongovernmental organizations or hospital services, with very few “walk-in” (client-initiated) testing<sup>9</sup>.

### 3.1.2 Effectiveness of national testing and counselling policies

Although most countries have national policies that conform to global recommendations for ethical practice of HIV testing (which includes informed consent, confidentiality and testing to be accompanied by counselling), implementation varies (13). Policies for mandatory testing are established in many countries in the Region. These policies may include for the purposes of pre-employment, premarital screening, hospital admission, or surgery and renal dialysis, or cover population categories such as migrants or expatriates seeking residency permits, blood donors, prisoners, refugees and internally displaced persons, pregnant women, people who inject drugs and their sexual partners, men who have sex with men and sex workers, among others. Available data indicate that in some countries, mandatory screening comprises the majority of all HIV tests performed (Table 1).

Widespread mandatory testing requires a significant amount of resources but detects few HIV positive individuals, and is not effective in identifying people at higher risk of infection. In addition, mandatory testing is unethical, reinforces stigma and discrimination and is a barrier to health service access. WHO and UNAIDS recommend that national HTC policies and practices should be reviewed to eliminate all non-voluntary (mandatory or compulsory) forms of testing of individuals except for ensuring safety of transfusion blood and blood products, and of organ transplants (14).

<sup>9</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

Table 1. Proportion of HIV positive tests in countries where mandatory HIV testing is conducted

Country	Contribution of mandatory testing and volume of HIV tests <sup>a</sup>	Proportion tested HIV positive (%)
Bahrain	90% of testing is done through mandatory screening. A total of 30 185 and 50 289 HIV tests were conducted in 2012 and 2013, respectively. During this period, 22 419 tests were done for premarital screening	Only 4 HIV cases (0.002%) detected HIV positive among premarital tests
Iraq	The majority of the 1 306 651 HIV tests conducted in 2011 done for mandatory screening. Screening done of 112 443 foreigners (workers and visitors) in 2012	20 HIV positive (0.002%) in 2011 10 HIV cases (0.009%) in 2012
Jordan	95% of 7163 HIV tests done in 2010–2011 conducted through mandatory screening	–
Kuwait	Most testing is done for mandatory screening such as premarital and pre-employment testing. A total of 751 999 and 792 296 tests were conducted in 2012 and 2013, respectively. Testing of expatriates accounts for about 45% of the total number of tests during this period. In 2011, 26 467 people were tested during premarital screening	0.003% HIV positive cases in 2011
Libya	All testing conducted are mandatory screening	–
Oman	In 2013, a total of 804 404 people had HIV tests. The majority (77%) of HIV testing occurred as part of mandatory screening of foreigners in the context of applications for residency permits	–
Qatar	Most of the 500 000 tests conducted annually are done for mandatory screening	–
Saudi Arabia	Majority of testing is done for mandatory screening. 201 288 and 313 352 people were tested for premarital screening in 2011 and 2013, respectively.	70 HIV positive cases (0.03%) in 2011 69 HIV cases (0.02%) in 2013
Syrian Arab Republic	Majority done in context of mandatory screening. Voluntary counselling and testing comprises 0.2% of all tests but identified 15% of all HIV cases. In 2011, 675 735 people tested	69 HIV positive cases (0.01%) in 2011
United Arab Emirates	Almost all testing is performed as mandatory screening for residency permits among expatriates: 96% of 2159 501 tests in 2010; and 91% of 1 800 621 tests in 2012. In 2010 and 2012, 18 558 and 33 041 tests were done for premarital screening among nationals, respectively	651 HIV positive cases (0.03%) of those screened for residency permits in 2011 293 HIV cases (0.02%) of those screened for residency permits in 2012 Premarital screening identified 3 cases in each year: 0.02% in 2010 and 0.009% in 2012

<sup>a</sup>Mandatory or compulsory screening is done in different populations and may include expatriates applying for residency permits, premarital screening, pre-employment, STI, TB, pregnant women, prisoners, key populations, admissions to hospitals, for surgery, inmates of drug rehabilitation centres and so on. Mandatory screening of blood and transfusion products is testing of products and not of the person who donates blood.

Source: Data extracted from UNGASS country narrative reports 2012 and 2014 (9), and *The situation of HIV testing and counselling policies and practices in the Eastern Mediterranean Region* (13).

### 3.1.3 Diversification of testing approaches to include community-based strategies

HTC models in the Region are predominantly based on traditional static/site-based VCT services linked or integrated within health facilities or at specific nongovernmental organization centres.

This model of VCT services provides testing to individuals primarily referred by nongovernmental

organizations or health care providers. There is little client-initiated testing where the individual seeks testing based on a self-perceived need. In the Syrian Arab Republic, only 0.2% of all tests were conducted through VCT services, and which identified 15% of HIV positive cases (9). Multiple factors contribute to the low uptake of facility-based services including low awareness of HIV and availability of HIV services, high levels of stigma and discrimination, the portrayal of HIV as a deadly infectious disease associated with criminal or immoral behaviours, and the lack of comprehensive prevention programmes in most countries (5).

However, several countries have initiatives to expand HIV testing through community-based approaches to reach out to key and vulnerable populations (9). For instance, Egypt provides anonymous and confidential VCT through static and mobile services with the support of nongovernmental organizations; key populations accounted for 15.3% and 22.6% of all testing done in 2010 and 2011, respectively. In Somalia, mobile counselling and testing services provide access to displaced persons in camps, as well as cross-border and migrating populations; In 2011 and 2012, a total of 49 121 (43% women) and 30 383 people had HIV tests, respectively. Saudi Arabia is accelerating VCT scale-up through anonymous mobile outreach to individuals at higher risk in “hotspots” to increase access to foreigners who would otherwise face deportation if found to be HIV positive. Mobile VCT services are also established in Lebanon and Pakistan.

In Sudan, mobile services delivered by existing VCT staff provide counselling and testing during community-based events organized specifically for HIV testing campaigns. The introduction of this approach has enabled a rapid increase in the number of individuals tested for HIV, although it has not resulted in a similar increase in the number of people living with HIV identified. Half of the 106 816 HIV tests conducted in Morocco between 2010 and 2011 were performed through mobile screening units, and testing among key populations quadrupled from 11 350 in 2008–2009 to 39 240 in 2010–2011. In 2012 and 2013, HTC was extensively promoted in three national testing campaigns in Morocco. A total of 84 053 pregnant women and 495 814 people (other than pregnant women) were tested during these national campaigns: 0.07% ( $n = 60$ ) of pregnant women and 0.2% ( $n = 985$ ) people were HIV positive. Thus, while community-based testing campaigns are generally useful to increase the uptake and promote awareness and availability of HIV testing, these approaches may miss out on high risk individuals.

Besides increasing the accessibility and availability of services, creating demand for HTC and having friendly services for key populations is also important. Ensuring clear programme guidelines that address the specific testing needs of key population clients is required. Despite prevention programmes reaching about 4400 sex workers and men who have sex with men in Sudan, only 31% actually had HIV tests done<sup>10</sup>.

Multiple barriers to accessing HIV testing exist in the Region. HIV testing is usually offered in isolation and not as part of screening for other conditions such as STI or hepatitis, or within a package of essential interventions for specific populations groups. In Punjab province, Pakistan, people who inject drugs who are offered HIV testing within VCT services, do not receive counselling (or are inadequately counselled) on other concurrent conditions such as managing addiction, hepatitis coinfection and the consequences of entry into the continuum of care for these conditions<sup>11</sup>. For individuals who test HIV positive,

<sup>10</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

<sup>11</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

### Box 2. Finding local solutions to the issue of long travel distances for voluntary counselling and testing (VCT) services

Contech International, a nongovernmental organization, provides HIV and STI prevention for female sex workers in Punjab province, Pakistan. Services include a mobile drop-in special health centre which caters for the mobility of sex workers at various locations. Referrals for VCT services located at district and tertiary hospitals are a problem for sex workers given their lifestyle. Most individuals referred do not reach VCT services. In order to address this issue, Contech International and the Punjab Provincial AIDS Control Programme arranged a local solution. VCT staff now visit the drop-in centre once a week to offer testing and counselling as outreach. Of the 848 tests conducted since the start of this arrangement to November 2013, no clients were found to be HIV positive.

Source: Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

there is a lack of ongoing support by peers or nongovernmental organizations, particularly among key populations. Current testing strategies which statutorily require additional confirmation with laboratory-based enzyme linked immunosorbent assays (ELISA) or Western blot after an initial screening with a rapid test, delay results. During this time, many individuals are lost to follow-up or choose not to return for their test results. Key populations who are at increased risk of HIV and do not return for their results, are missed opportunities for prevention and linkage to services. Clients accessing HTC services also report having poor experiences within health care facilities due to stigma and discrimination, either from providers or other patients. Long waits for HTC services, inconvenient opening times of services, and the fear of being exposed to stigma and discrimination within hospital settings are additional barriers for seeking HIV testing. While mobile HTC offered through nongovernmental organization outreach is helpful for creating demand, referrals to HTC services and travel distances remain challenges (Box 2).

### 3.1.4 Implementation of provider-initiated testing and counselling

WHO recommends the inclusion of PITC in national policies. This involves the routine offer of testing to people receiving medical care in clinical services such as sexual health, TB and drug treatment clinics, and antenatal, childbirth and postpartum services, according to the epidemic setting. Routine offering of HIV testing should be provided to key populations through various services irrespective of epidemic setting.

Table 2 provides the status of national recommendations for testing within health care settings in 2011–2012. Most countries have recommendations for PITC within ANC settings as a component of prevention of mother-to-child transmission (PMTCT). However, implementation varies across and within countries. Oman and the United Arab Emirates have initiated universal screening during antenatal care. In these countries, it is unknown if women are informed of their right to “opt-out” of universal HIV testing. In Morocco, pilot PMTCT programmes implemented in 2010–2011 showed that 86% of pregnant women offered HIV testing agreed, and expansion of the programme to other regions is underway (9). For TB patients, 10 countries have policies for either routine offering of testing or universal testing, while three countries have instituted mandatory testing. PITC policies are not yet established for patients attending STI services in most countries.

Table 2. Service delivery models and approaches to HIV testing and counselling, 2013

Country	Approaches to client-initiated testing and counselling		National recommendations for PITC (2013)		
	Facility-based testing <sup>a</sup>	Community-based testing <sup>a</sup>	Pregnant women or within ANC settings	TB patients	STI patients
Afghanistan	Yes	No	Risk assessment	Risk assessment	Risk assessment
Bahrain	Yes	No	Risk assessment	Mandatory	Mandatory
Djibouti	Yes	–	Routine offer	Routine offer	Routine offer
Egypt	Yes	Yes	Routine offer	Routine offer	Routine offer
Iran (Islamic Republic of)	Yes	Yes	Risk assessment	Risk assessment	Routine offer if HTC services are available on-site
Iraq	Yes	No	Risk assessment	Routine offer	No policy for HIV testing
Jordan	Yes	–	No routine offer	Routine offer	No routine offer
Kuwait	Yes, however HTC services have not been established	No	No policy, likely based on risk assessment <sup>b</sup>	Universal testing	Routine offer
Lebanon	Yes	Yes	Routine offer	Routine offer	Routine offer
Libya	Yes, however HTC services have not been established	–	Mandatory	Mandatory	Mandatory
Morocco	Yes	Yes	–	–	–
Oman	Yes, however VCT services have not been established	–	Universal testing	–	–
Pakistan	Yes	Yes	Routine offer	No routine offer	No routine offer
Occupied Palestinian territories	Yes	Yes	Routine offer	Universal testing	Routine offer
Qatar	Yes	Yes	Mandatory	No routine offer	No routine offer
Saudi Arabia	Yes	Yes	No routine offer	Mandatory	Mandatory
Somalia	Yes	Yes	–	–	–
Sudan	Yes	Yes	Routine offer	No routine offer	No routine offer
Syrian Arab Republic	Yes	No	No policy for HIV testing	Universal testing	Routine offer
Tunisia	Yes	–	Routine offer <sup>c</sup>	Routine offer	–
United Arab Emirates	Yes, however VCT services have not been established <sup>d</sup>	–	Universal testing	–	–
Yemen	Yes	Yes	No routine offer	No routine offer	No routine offer



<sup>a</sup> Facility-based testing includes client-initiated HTC and PITC testing within hospitals and clinics. Community-based testing and counselling include testing in community setting such as drop-in centres, outreach settings, venues, hotspots, workplaces, mobile services, door-to-door, campaigns, schools and universities.

<sup>b</sup> Universal screening of all pregnant women will be introduced in 2014–2015.

<sup>c</sup> Being introduced in 2014.

<sup>d</sup> Existing testing policy being revised to allow anonymous HTC in 2014.

Source: Extracted from the UNGASS country narrative reports 2012 and 2014 (9) and regional update 2012 (7).

### 3.1.5 Testing coverage among pregnant women

The critical step for elimination of mother-to-child HIV transmission begins with testing and counselling for pregnant women who do not know their status, as early as possible, during their pregnancy. WHO strongly recommends PITC in antenatal settings for countries with generalized epidemics. For low-level and concentrated epidemics, WHO is working on guidance for the most effective approach for testing pregnant women in these contexts (10). Nonetheless, many countries with low-level and concentrated HIV epidemics have invested in and adopted informed universal HIV testing as part of the standard antenatal package of tests.

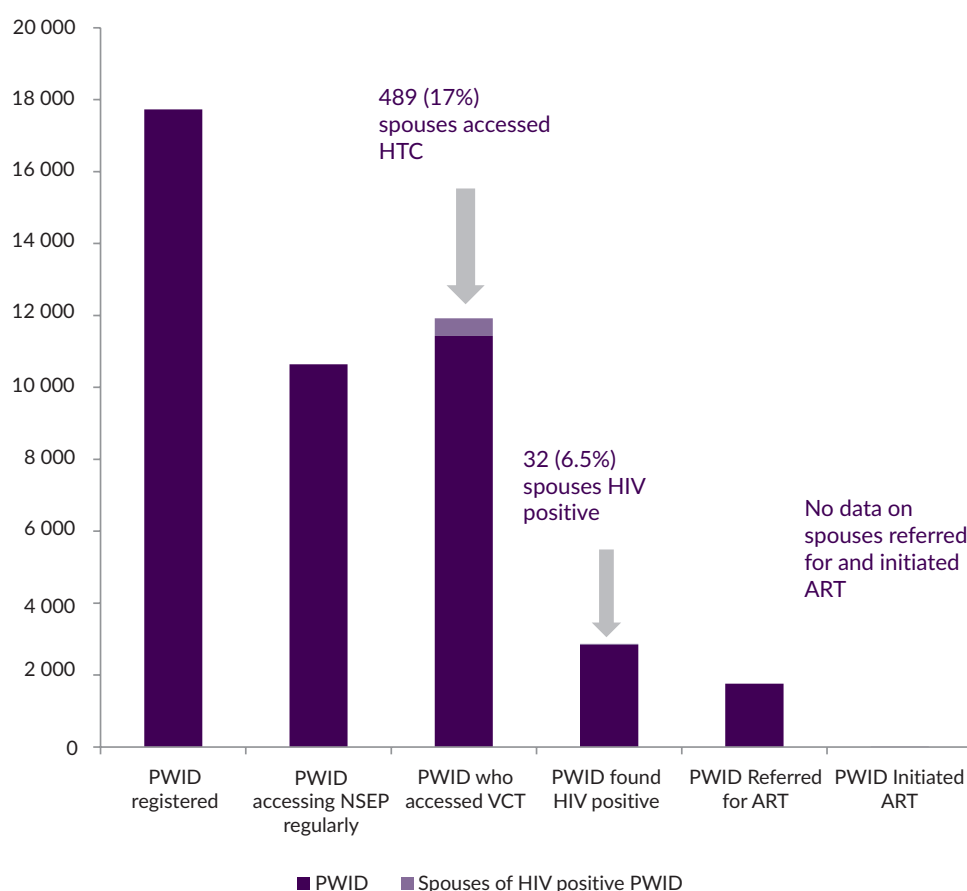
Between 2009 and 2013, the global coverage of pregnant women in low- and middle-income countries receiving HTC increased from 26% to 44% (1). In contrast, between 2010 and 2013, coverage in the Region remained static at 1–2%. A number of issues exist which include PMTCT being a low public health priority since the numbers of people living with HIV are small, limited awareness of personal risk and HIV risk among women, lack of HTC services, low ANC coverage in some countries, inadequate knowledge on PITC, as well as limited good-quality comprehensive sexual and reproductive health services (6). In addition, for countries with high annual numbers of pregnancies, low-level epidemics and limited resources, there are challenges in determining the best approach to allocating resources and optimizing testing within the ANC setting.

Implementation of testing policies among pregnant women is challenging. As an example, the offer and uptake of HIV testing is low in Sudan: only 24% of pregnant women in one of the largest maternity hospital actually took the test. The reasons for this include health providers refusing or forgetting to offer the test, rationing of HIV testing kits within a specific service site, fragmented services (having to wait or see another service provider, complex processes for obtaining an HIV test, additional blood taking for HIV testing in addition to the routine antenatal blood tests) and having to consult first with their spouses<sup>12</sup>. Similar operational issues exist in Pakistan where contrary to the national recommendation of routine offering of HIV testing within ANC settings, pregnant women in Punjab province are offered testing based on a risk assessment of a history of blood transfusion or having a husband who has ever worked abroad or ever injected drugs<sup>13</sup>. Of the 4.6 million pregnant women in Pakistan, only 0.1% knew their status in 2013 (1).

<sup>12</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

<sup>13</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.





Source: Adapted from HIV testing and counselling services for people who inject drugs, their wives, children and sexual partners in Pakistan. Presentation by the nongovernmental organization Nai Zindagi at the UNAIDS regional meeting on community-based HIV testing: challenges and opportunities, Bangkok, Thailand, 10–11 October 2013.

Fig. 3. Uptake of HTC among spouses of HIV positive people who inject drugs, Pakistan, 2013

### 3.1.6 Partner and couples testing (including within antenatal settings)

There is little data available on the policies and implementation of HIV testing among the sexual partners or within couple relationships of key populations and HIV positive individuals in the Region. The MENA HIV/AIDS Epidemiology Synthesis Project has highlighted the vulnerability of the sexual partners of key populations such as people who inject drugs and men who have sex with men, as well as the clients of sex workers. Specifically, women are vulnerable as most risk behaviours are practiced by men (15). Women comprise 44% of adults living with HIV and are predominantly infected through their husbands or other sexual partners (intimate partner transmission<sup>14</sup>) (6). Recent modelling studies for modes of transmission in Morocco indicate that 26% of new infections occur among stable (low-risk) heterosexual couples (16). Slightly more than half (52%) of new HIV infections in the country are among women and two-thirds (71%) are due to an infected spouse.

<sup>14</sup> The term “intimate partner transmission” is used instead of “spousal transmission” because intimate partners are not necessarily married. The full expression “HIV transmission in intimate partner relationships” describes the transmission of HIV to people from their regular partners who inject drugs or have sex with other people, including with sex workers (UNAIDS terminology guidelines, October 2011. Geneva: UNAIDS; 2011).

Studies in non-injecting female sexual partners of men who inject drugs in the Islamic Republic of Iran found an HIV prevalence of 2.8%, which is substantially higher than the general population (17). In Pakistan, a Global Fund to Fight AIDS, Tuberculosis and Malaria-supported pilot in 19 districts providing a comprehensive package of services for people who inject drugs and their families (spouses, children and sexual partners), found that only 17% of the spouses of HIV positive people who inject drugs accessed HTC, while 6.5% of the spouses were HIV infected (Fig. 3). One key reason for the low uptake of testing services was that the wives of men who inject drugs were often the sole caregivers and breadwinners for the family. Testing approaches should therefore be designed to minimize inconvenience to their daily activities.

WHO recommends that couples and partners are offered voluntary HTC with support for mutual disclosure, in various health care settings (18). Couples testing provides many potential benefits such as mutual disclosure and support, and shared decisions on HIV prevention and reproductive health. Besides providing additional entry points for HIV testing of men, the counselling and testing of the pregnant women and her partner within ANC services can help to identify couples at risk and prevent HIV infection in both women and children.

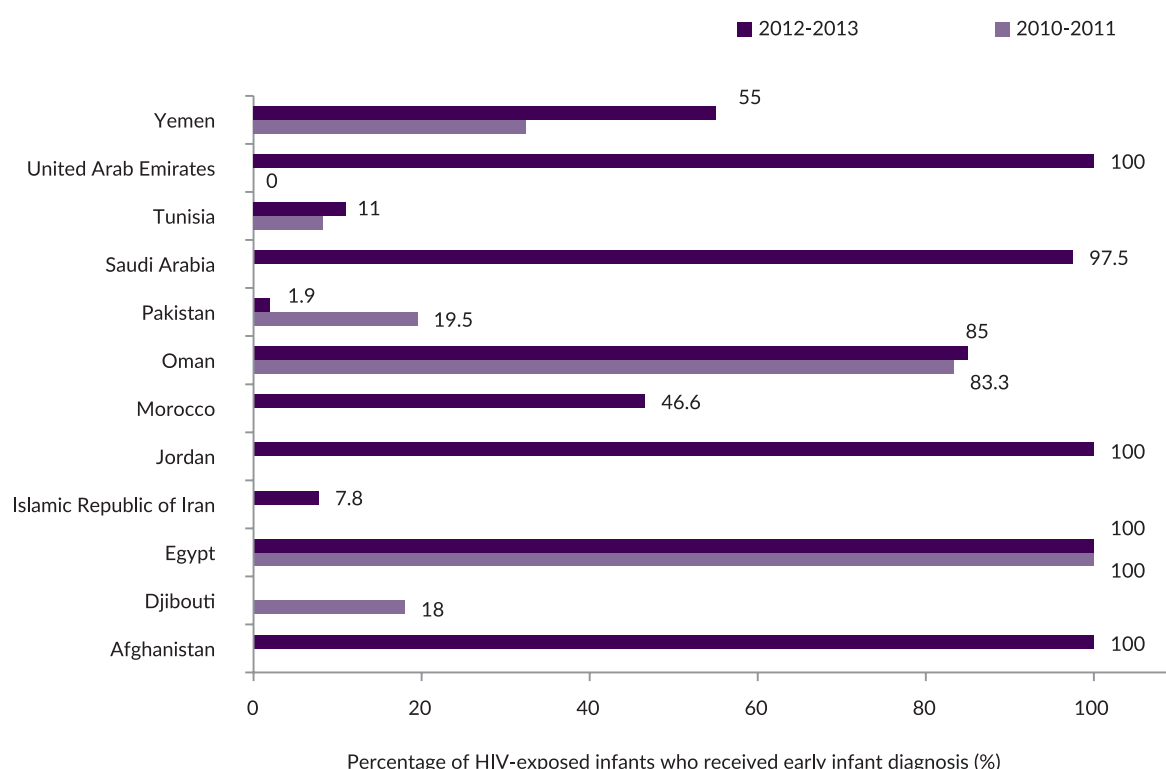
In 2012, WHO recommended that all HIV positive partners in serodiscordant relationships be offered ART regardless of their CD4 count. Several countries in the Region have begun planning to introduce treatment for HIV infected individuals in serodiscordant relationships (see section 3.3.5). The strengthening of HIV testing for partners and couples will be essential to ensure effective implementation of this recommendation.

### 3.1.7 Early infant diagnosis

In the absence of ART, one-third of infants living with HIV will die before their first birthday. The early testing of infants born to HIV positive mothers is essential to determine their status and start them on ART. WHO recommends that HIV-exposed infants be tested at 4–6 weeks of age or at the earliest opportunity thereafter, using a virological test. HIV-infected infants should start ART without delay based on the initial positive virological tests results, while at the same time, a second sample to confirm the initial test results is collected.

The effectiveness of early infant diagnosis (EID) services can be defined by their ability to: identify all HIV-exposed infants and their mothers; provide appropriate HIV testing and return the test results to the caregiver in a timely manner; retain HIV-exposed infants and their mothers in care to ensure the mother-infant pair successfully navigates the EID cascade to the point of a definitive diagnosis, without being lost to follow-up; and identify all HIV-infected infants and link them to treatment services to ensure timely initiation of ART (19).

In 2011, testing rates for infants globally were low with only 35% (29–41%) of infants born to HIV positive mothers receiving an HIV test within the first two months of life. In the same year, overall coverage was 2% (1–3%) in the Eastern Mediterranean Region (2). This has improved slightly to about 44% at the global level based on reported data from 88 low-and middle-income countries in 2013 (1). Within the Region, there is marked variability in early infant diagnosis rates between high-income countries and low-and middle-income countries (Fig. 4).



Source: UNGASS country narrative reports 2010, 2012 and 2014 for the specified reporting periods (9).

**Fig. 4. Percentage of infants born to HIV-positive women receiving a virological test for HIV within two months of birth**

These differences reflect the dissimilarities in the mother-to-child-transmission burden among countries, as well as PMTCT coverage and HIV testing among pregnant women, the availability and accessibility of quality-assured virological testing, and possible losses from the PMTCT care cascade (such as parents returning with their infants to the health facility for the 4–6 week test after birth, and thereafter linking HIV-infected infants into treatment services and starting ART). Many countries report small numbers of infants born to HIV positive pregnant women. Yemen, for example, reported nine HIV positive women giving birth in 2010, 17 in 2011 and 18 in 2013 (9). This was similar in Egypt and Oman, with six and 30 HIV-exposed infants born in 2011, respectively. Jordan reported testing one infant in 2012–2013 (100%).

Several countries with a higher estimated burden of HIV positive pregnant women, such as Somalia and Sudan, do not have facilities for early infant diagnosis. HIV-exposed infants can only be diagnosed at the eighteenth month of age using standard serological tests. In Sudan, these children receive cotrimoxazole prophylaxis and frequent follow-up clinical visits and other tests because of the absence of early infant diagnosis. Parents perceive this as unnecessary and a major cause of distress, resulting at times in disengagement from care<sup>15</sup>.

<sup>15</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

Even with established early infant diagnostic capacity, coverage is low. In 2012, the testing coverage in Pakistan was 19.5% ( $n = 8/41$  infants). As HIV testing among pregnant women was scaled-up, similar increases in early infant testing were not seen. Only 1.9% ( $n = 30/1554$ ) of HIV-exposed infants had testing done in 2013 (9).

### 3.1.8 Late diagnosis

In Sudan, up to 81% of all newly diagnosed people living with HIV are already at WHO clinical stages 3 and 4 at the time of diagnosis<sup>16</sup>. The issue of late diagnosis indicates that testing and counselling programmes are not identifying individuals early enough after HIV infection and that there is a lack of availability and accessibility of services for people at higher risk of infection. Presenting late for HIV diagnosis and ART services often means the presence of multiple comorbidities, opportunistic infections, worse overall functioning and mental health status, and higher mortality. Even with efficacious treatment, the health outcome is generally worse in people presenting late compared to those whose immune status is not compromised (see section 3.2.1). Factors influencing late presentation for diagnosis are complex and includes demographic factors (gender, socioeconomic status, immigration status), structural barriers (such as availability of PITC in health services to allow detection of symptomatic individuals and health care provider attitudes towards the value of HIV testing) and emotional issues (psychological and coping mechanisms, perceived risk and stigma) (20).

## 3.2 Linkage to ART (and pre-ART) care, support and treatment

The last of the “5Cs” of HTC is connection (or linkage) to care and treatment services. Early linkage to ART care is crucial for ensuring that HIV positive individuals are assessed for eligibility to start treatment (by clinical staging and/or CD4 count) to prevent and manage opportunistic and other illnesses, continue psychosocial counselling support and access prevention interventions to reduce transmission of the virus. Several good practices can improve linkage to care. These include: integrating HTC with treatment services, providing onsite or immediate (point-of-care ) CD4 testing with same-day results; assisting with transport if the ART site is far away from testing services; involving community outreach workers to identify people lost to follow-up (between HIV testing and enrolment with treatment facilities); peer support; and using new technologies such as mobile phone reminders (2).

### 3.2.1 CD4 testing and late presentation

Late diagnosis and presentation<sup>17</sup> is associated with significantly higher medical costs, especially for the management of comorbidities associated with advanced disease. Direct medical costs continue to remain high for late presenters in subsequent years, despite improved CD4 counts, compared to patients presenting with CD4 > 350 cells/mm<sup>3</sup> (21).

<sup>16</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

<sup>17</sup> While there is no universally agreed consensus on the definition of “late presenters for treatment”, late and very late presentation of HIV positive individuals may be defined according to CD4 counts at presentation for care below 350 or 200 cells/mm<sup>3</sup>, respectively, or if an AIDS-defining condition has already occurred.

In a recent review of HIV surveillance in the Region, data on CD4 counts at the time of HIV diagnosis for HIV and AIDS case reporting were submitted by 12 countries for 2009–2011 (Table 3) (7). Completeness of CD4 count reporting ranged from 6% to 100% in the six countries reporting for 2011. In Jordan, Morocco, Oman, occupied Palestinian territories and Tunisia, more than 50% of newly diagnosed adult HIV cases had CD4 counts less than 350 cells/mm<sup>3</sup> and were eligible for ART initiation. There is no data on the proportion of people with advanced HIV disease; that is, those diagnosed with CD4 counts  $\leq 200$  cells/mm<sup>3</sup>. Nonetheless, case reporting data from Morocco showed that the proportion of people living with HIV who are asymptomatic at the time of diagnosis had increased from 32% in 2009 to over 50% in 2013(9). This trend was similar in Tunisia which noted declining proportions of people with AIDS from 50% to 30% between 1986 and 2013.

Little is known on when people diagnosed HIV positive at HTC services actually arrive and register at ART services, or the length of the period between registration with ART clinics and initiation of ART. Box 3 illustrates an innovative model of mobile point-of-care CD4 testing in Pakistan. This model of service delivery attempts to reduce the time span between diagnosis of HIV among PWID and their registration in care.

Table 3. CD4 count reporting in newly diagnosed adult HIV cases (15+ years) in selected countries, 2009–2011

Country	Proportion of all newly diagnosed adult and adolescent HIV cases (15+ years)					
	2009		2010		2011	
	% that had a CD4 count reported (completeness of reporting)	% with CD4 $\leq 350$ at first HIV diagnosis	% that had a CD4 count reported (completeness of reporting)	% with CD4 $\leq 350$ at first HIV diagnosis	% that had a CD4 count reported (completeness of reporting)	% with CD4 $\leq 350$ at first HIV diagnosis
Bahrain	–	–	81	31	–	–
Djibouti	95	–	–	–	–	–
Egypt	–	–	100	25	–	–
Jordan	–	–	–	–	15	58
Morocco	100	52	71	79	100	55
Oman	35	73	53	27	67	64
Pakistan	90	36	–	–	–	–
Occupied Palestinian territories	100	100	No HIV cases reported	No HIV cases reported	17	100
Qatar	–	–	85	50	–	–
Saudi Arabia	90	22	100	12	–	–
Syrian Arab Republic	11	75	–	–	6	25 (1 out of 4 cases)
Tunisia	72	40	100	31	47	59

Source: HIV surveillance in the WHO Eastern Mediterranean Region: regional update 2012 (7).

### Box 3. Point-of-care CD4 testing reduces barriers in accessing ART services in Pakistan

HIV positive people who inject drugs and their spouses face difficulties in accessing ART care for multiple reasons. Once diagnosed with HIV infection, there are delays in the person reaching ART centres, obtaining CD4 tests to evaluate treatment eligibility (due to machine breakdown, reagent shortages, waiting time for results, and so on) and starting ART.

In 2013, piloting of mobile point-of-care CD4 testing through nongovernmental organizations increased uptake of registration and ART four-fold. Expansion to 23 districts began in September 2013. By the end of 2013, 700 mobile CD4 counts had been conducted and 39% of these were less than 350 cells/mm<sup>3</sup>. Of the 273 persons eligible for treatment, 115 (42%) had been registered at ART clinics.

This experience mirrors the findings of using point-of-care CD4 testing at four primary health clinics in Mozambique: loss to follow-up before CD4 count evaluation dropped from 57% to 21%; ART initiation reduced from 64% to 33% and concurrently the percentage of people living with HIV starting treatment increased from 12% to 22%. The median time taken to complete CD4 staging decreased from 32 to three days. This impacted the median time taken between enrolment and starting ART from 48 to 20 days.

Source: reference (23).

## 3.2.2 Barriers to linkages to care

Multiple studies conducted worldwide show similarities in the barriers to connection and retention in ART care. These barriers are structural (transport, finances, opportunity costs such as loss of wages, long waiting times, and lack of integrated services or “one-stop shops”), emotional (fear of side effects, stigma and discrimination, concerns over disclosure, perceived good health, and negative attitudes from health care providers) and clinical (side effects to medication, concurrent TB treatment, and pill burden).

Cascade analysis in Somalia found that approximately 70% (713 of 1023 persons) of newly diagnosed people living with HIV were successfully connected to care in 2012 (11). In Sudan, of 12 401 people living with HIV who were aware of their status, 81% had ever enrolled in treatment services<sup>18</sup> (of people ever diagnosed HIV positive between 2006 and 2012, since there was a lack of data to specify the time period from HIV diagnosis to when the individual enrolled with ART sites). Qualitative information indicates several barriers to linking into care including the lack of clear patient tracking mechanisms to ensure enrolment at ART sites after referral from testing services, lack of communication between HIV testing and ART services, inadequate use of peer support to help newly diagnosed individuals navigate the often complex process of enrolment into HIV care, misunderstanding of national treatment guidelines, weak referral systems and patient factors such as denial and belief that AIDS is a death sentence<sup>19</sup>. The lack of access to CD4 testing to evaluate ART eligibility, with long waiting times for results to return, act as a major barrier. In 2014, point-of-care CD4 testing was being implemented in three countries in the Region: Djibouti, Morocco and Pakistan (1).

<sup>18</sup> Defined operationally as “being prescribed ART or co-trimoxazole”. Out of people ever diagnosed HIV positive between 2006 and 2012, since there was a lack of data to specify the time period from HIV diagnosis to when the individual enrolled with ART sites.

<sup>19</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

### 3.2.3 Linking key populations and their partners to care

Key populations, in particular, have specific challenges in linking to care. Criminalization of injecting drug use as well as high levels of stigma towards men who have sex with men and sex workers discourages these individuals from seeking care. Furthermore, their partners are not being reached by interventions in the Region, and little is known about intimate partner transmission. The scale of interventions in most countries in the Region is inadequate for key populations, as well as for other vulnerable populations such as migrants and displaced persons. In 2012, many countries had taken steps to generate important strategic information on the potential drivers of the HIV epidemic, as well as for characterizing key populations (6). There is, however, little information on the linkages to ART care for these higher risk individuals who are HIV infected in the Region.

In Punjab province, Pakistan, existing barriers to linkages and enrolment in care for people living with HIV include a delay of a minimum of two weeks for the confirmatory results of HIV testing, lack of appropriate referral and tracking mechanisms between HTC and ART services, weak coordination between nongovernmental organizations and HTC/HIV services, inadequate capacity for HTC centres to follow-up clients or with nongovernmental organizations, and stigma within health care settings<sup>20</sup>. These barriers are amplified for key populations. Many people who inject drugs live in the street, are mobile and are unable to keep their appointments. Refusal of referral to ART services is not uncommon, as many clients deny their HIV positive status, fear stigma and discrimination or are unprepared for the care and treatment process which requires multiple visits and travel to hospitals. Current national treatment guidelines exclude ART initiation for people who currently use drugs and entry into ART care therefore lacks a “meaningful service”. Strong family support to deal with drug addiction, staff commitment, accompanying clients to HTC services for the first referral visit, transport subsidies and funding for diagnostic tests as required all increase the success of referrals. Similar issues are faced by sex workers and men who have sex with men.

### 3.2.4 Retention in pre-ART care

Linkage to HIV care (or enrolment in ART services) does not equate to actually starting ART. Patients not eligible for treatment usually have to wait for a variable period of time and undergo multiple clinical visits. Systematic reviews of studies in sub-Saharan Africa have shown that more than half of patients are lost from pre-ART care prior to ART eligibility and initiation of treatment (24,25). The main reasons for poor pre-ART retention include the perception of being asymptomatic and not requiring medical care, the costs of repeated monitoring visits without an actual medical intervention/benefit, opportunity costs (loss of wages, costs of transport, time off work) and fear of being recognized as a client of an HIV clinic (24). During pre-ART care, some patients die because of late diagnosis and are severely ill when they present at ART services. Patients who drop out of care may re-engage several times with the health system during the course of their illness, at the same or different treatment facility for various services. More importantly, these patients are at higher risk of becoming late presenters to treatment and returning to services only when they are seriously ill.

Treatment cascade analysis in Sudan identified several reasons influencing loss from pre-ART care. These include the unavailability and breakdown of CD4 count services, lack of food incentives, cost of services

<sup>20</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.



(for medicines other than ARV drugs) and transport, opportunity costs (loss of wages), distance to ART sites that are crowded with long waiting times, and the absence of patient tracking mechanisms specifically for pre-ART individuals defaulting appointments.

In key populations, the lack of a direct medical intervention (benefit) such as initiation of ART acts as a disincentive to continue with the lengthy pre-ART care process<sup>21</sup>. For people who inject drugs, key informants in Punjab province, Pakistan, report that national guidelines stipulating that eligibility for ART initiation requires successful detoxification for a minimum of six months, further restricts access to treatment. Of the 300 people who inject drugs registered for HIV care in one hospital, only 20 had started ART.

### 3.3 ART treatment

#### 3.3.1 ART coverage: getting people on treatment

The Eastern Mediterranean Region saw an increasing number of people receiving ART from about 24 000 to 36 500 persons, representing a 55% increase, between 2011 and the end of 2013. Overall regional ART coverage remained low in 2013, at approximately 10%. Djibouti and Morocco had the highest ART coverage in the Region, with 28% and 21%, respectively (Fig.5). Egypt, Tunisia and Yemen each averaged about 16% treatment coverage in 2013.

As new infections continue unabated in the Region, the estimated number of people living with HIV, requiring ART and unmet need for treatment is increasing (Annex 2). Out of 11 countries with estimations available in 2013, five bore the highest burden of people living with HIV, ranging from 30 500 to 70 000 people. These included the Islamic Republic of Iran, Morocco, Pakistan, Somalia and Sudan, which comprised 89% of the estimated total people living with HIV in the Region.

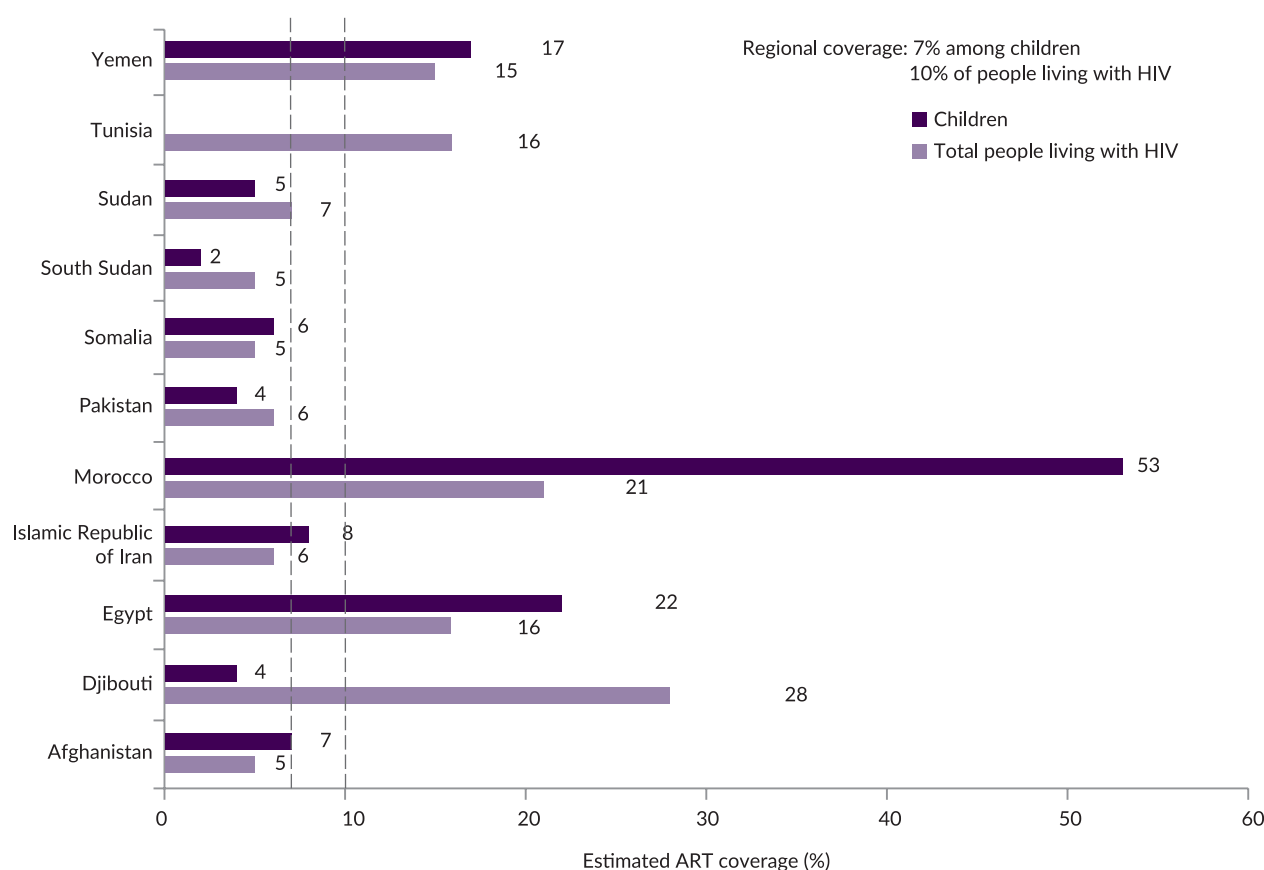
The approximate total ART need based on national ART eligibility criteria was 140 000 people. These five countries also accounted for 87% of the ART need in the Region, ranging from 12 900 people requiring treatment in Somalia to 48 700 in Pakistan.

Information on ART need among children living with HIV is inadequate. Available 2013 data from eight countries<sup>22</sup> indicate that approximately 11 800 children required ART based on national treatment guidelines, with substantial variation. Somalia and Sudan bore the greatest estimated burden with of 3100 and 3300 children requiring treatment, respectively. There was improvement in regional access to treatment for children in 2012. Of the 30 759 people receiving treatment, 3082 (10%) were children less than 14 years of age. In 2013, this was only 1211 (3.3%) of the total 36 506 people on ART. Morocco and Somalia had the highest numbers of children receiving treatment, averaging 325 children; while Bahrain, Jordan, Kuwait, occupied Palestinian territories and the Syrian Arab Republic had less than five children on ART in 2013.

<sup>21</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

<sup>22</sup> Djibouti, Egypt, Islamic Republic of Iran, Morocco, Pakistan, Somalia, Sudan and Yemen.





Source: UNAIDS Spectrum estimates. Coverage is calculated as the percentage of all people living with HIV following the 2014 GARPR guidelines (26). Regional ART coverage was approximately 7% (5–9%) for children and 10% (7–15%) of the total number of people living with HIV in 2013 (1).

Fig. 5. Estimated ART coverage among children and all people living with HIV, 2013

### 3.3.2 Timing of initiation: moving towards earlier treatment

The majority of countries in the Eastern Mediterranean Region have national guidelines that follow the 2010 WHO guidelines on treatment. With the 2013 update, WHO recommends initiation of treatment in adults and adolescents at CD4 counts of 500 cells/mm<sup>3</sup> or less, giving priority to starting treatment for those with CD4 counts ≤ 350 cells/mm<sup>3</sup> or severe/advance HIV disease (WHO clinical stage 3 or 4). At a regional meeting held to disseminate the WHO 2013 consolidated guidelines in Morocco in September 2013, of the 12 countries that participated, seven planned to increase the CD4 count threshold to ≤ 500 cells/mm<sup>3</sup> for ART initiation.

### 3.3.3 Increasing access and earlier treatment among children living with HIV

Early treatment initiation for children is crucial to ensure survival, reduce morbidity, and optimize child growth and development, including neurodevelopment. HIV disease in infants and young children progresses faster compared to adults, and morbidities such as bacterial and other preventable infections are more common and severe in young children. HIV may also cause growth failure and affect brain

development in children. Up to half of infants and children die before the age of 2 years in the absence of intervention. The risks of mortality and disease, and disease progression in the absence of treatment, fall to rates similar to those of young adults by the age of 5 years.

The 2013 WHO consolidated guidelines recommend initiating treatment in all HIV positive children up to 5 years of age, and increasing the CD4 count threshold to 500 cells/mm<sup>3</sup> in children older than 5 years in line with adults. These guidelines provide the opportunity to simplify and expand access to ART in children, reduce the need to have CD4 as criteria for ART initiation, expand treatment in under-5 and thus reduce morbidity and mortality, and potentially improve retention in care. Most countries surveyed planned to adopt the 2013 WHO recommendations for children above 5 years of age in alignment with adults and adolescent thresholds. For younger children, nine countries plan to use the recommended age threshold of 5 years, while the other two countries plan to provide ART to all children irrespective of age based on programmatic and operational considerations.

### 3.3.4 Elimination of new infections in children and keeping the mothers alive

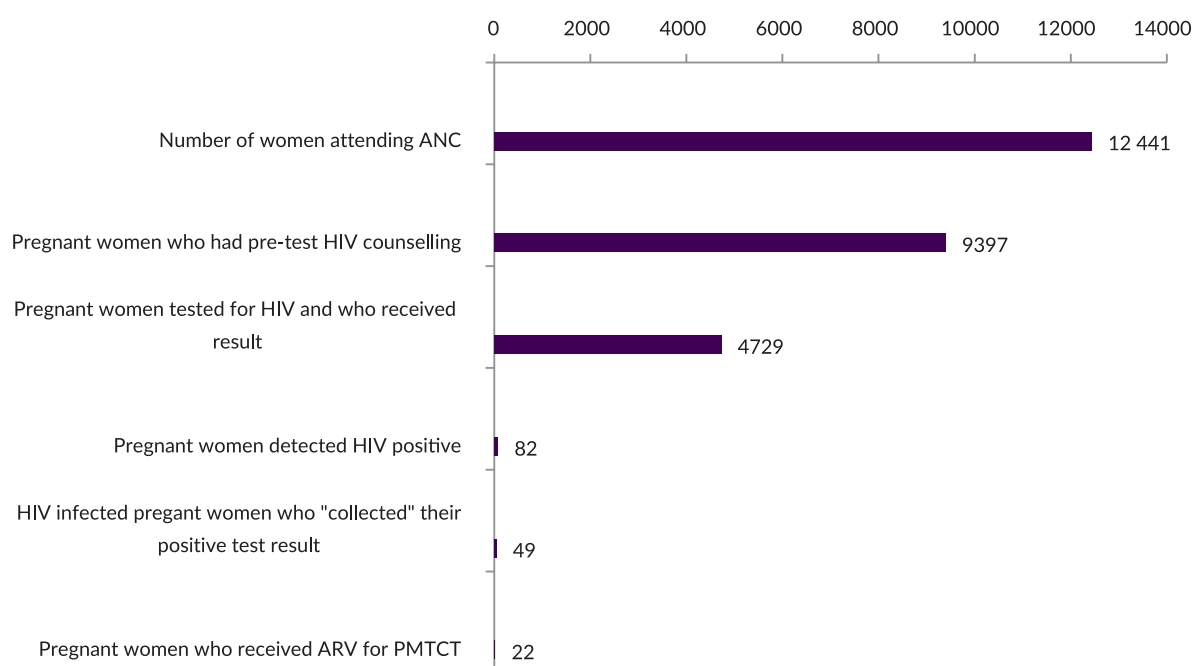
In 2013, WHO recommended that all pregnant women living with HIV initiate treatment and that, in most settings, women should continue with lifelong treatment. For women not eligible for ART for their own health, countries should decide based on programmatic and operational considerations on the need to continue treatment (Option B+) versus stopping ART (Option B) once the transmission risk to the child has ceased.

There has been some progress in the coverage of pregnant women living with HIV in the Region receiving effective ARV regimens to prevent mother-to-child transmission. Compared to 2011, when regional coverage was less than 10%, about 26% (18–39%) of pregnant women living with HIV received ARV drugs in 2013(1). However, this is low compared to an overall global coverage of 67% (62–73%).

Because of the Region's lack of progress in increasing coverage of PMTCT, WHO, UNICEF, UNAIDS and UNFPA launched a Region-specific strategic framework to address this gap in 2012 (27). There was some progress in 2012, with varying achievements among countries. Morocco and Djibouti achieved significant progress in estimated coverage with 39% and 36% of HIV positive pregnant women receiving PMTCT interventions, respectively.

Although Somalia reached only 3% coverage of the estimated 3091 pregnant women, there was some success in ensuring that 85% of those tested HIV positive received ARV drugs; and 60% of HIV exposed infants received ARV prophylaxis (6).

Several challenges impede the scaling-up of PMTCT in the Region. These include lack of knowledge and experience among health providers, weak maternal health services, particularly in rural and remote areas, stigma and discrimination including within health care settings, low uptake of HIV testing by pregnant women because of fear, low numbers of women living with HIV and the challenges of connecting them with good quality care and treatment facilities. Even among pregnant women who opt to receive the HIV test, a significant proportion of them do not return to get their results. In 2013, data on the PMTCT cascade in Djibouti showed that only 60% of HIV-infected pregnant women returned to collect their (positive) HIV test results. Only 45% of HIV-infected pregnant women who collected their positive test results were started on ARV regimens (Fig. 6).



Source: Data extracted from the UNGASS 2014 country narrative report (9).

Fig. 6. The cascade of HIV testing to ART for PMTCT, Djibouti, 2013

Table 4. Current and planned regimen policies for PMTCT among HIV positive pregnant women, 2013–2014

Current PMTCT regimen as of September 2013 <sup>a</sup>	Planned PMTCT regimen in 2014 <sup>a</sup>
<b>Option B+</b>	<b>Option B+</b>
Afghanistan	Afghanistan
Lebanon	Lebanon
Oman	Morocco
Syrian Arab Republic	Oman
	Pakistan
	Syrian Arab Republic
	Sudan
	Tunisia
<b>Option B</b>	<b>Option B</b>
Islamic Republic of Iran	Islamic Republic of Iran
Pakistan	Yemen
Sudan	
Tunisia	
Yemen	

<sup>a</sup> Iraq participated in the regional meeting but did not submit responses to parts of the survey.

Source: Responses to the WHO country ART policy survey carried out during the regional workshop for dissemination of the new WHO consolidated guidelines on HIV treatment and care, Casablanca, Morocco, 9–10 September 2013.

Because of low numbers of women living with HIV, PMTCT is often not a national priority, lacks integration with routine ANC and availability of services is limited as most HIV and PMTCT services are located at urban or tertiary health facilities. A tremendous challenge in the Region is finding the most cost-effective approach to test the large numbers of (mostly) low-risk pregnant women to find the relatively few who are HIV infected, particularly in countries with high fertility rates. Against this background, most of the 12 countries surveyed for planned changes in their national PMTCT policies, will be providing lifelong ART (Option B+) to all women found HIV infected while pregnant, irrespective of CD4 count or WHO clinical stage (Table 4).

### 3.3.5 The strategic use of ART for prevention and treatment in specific populations

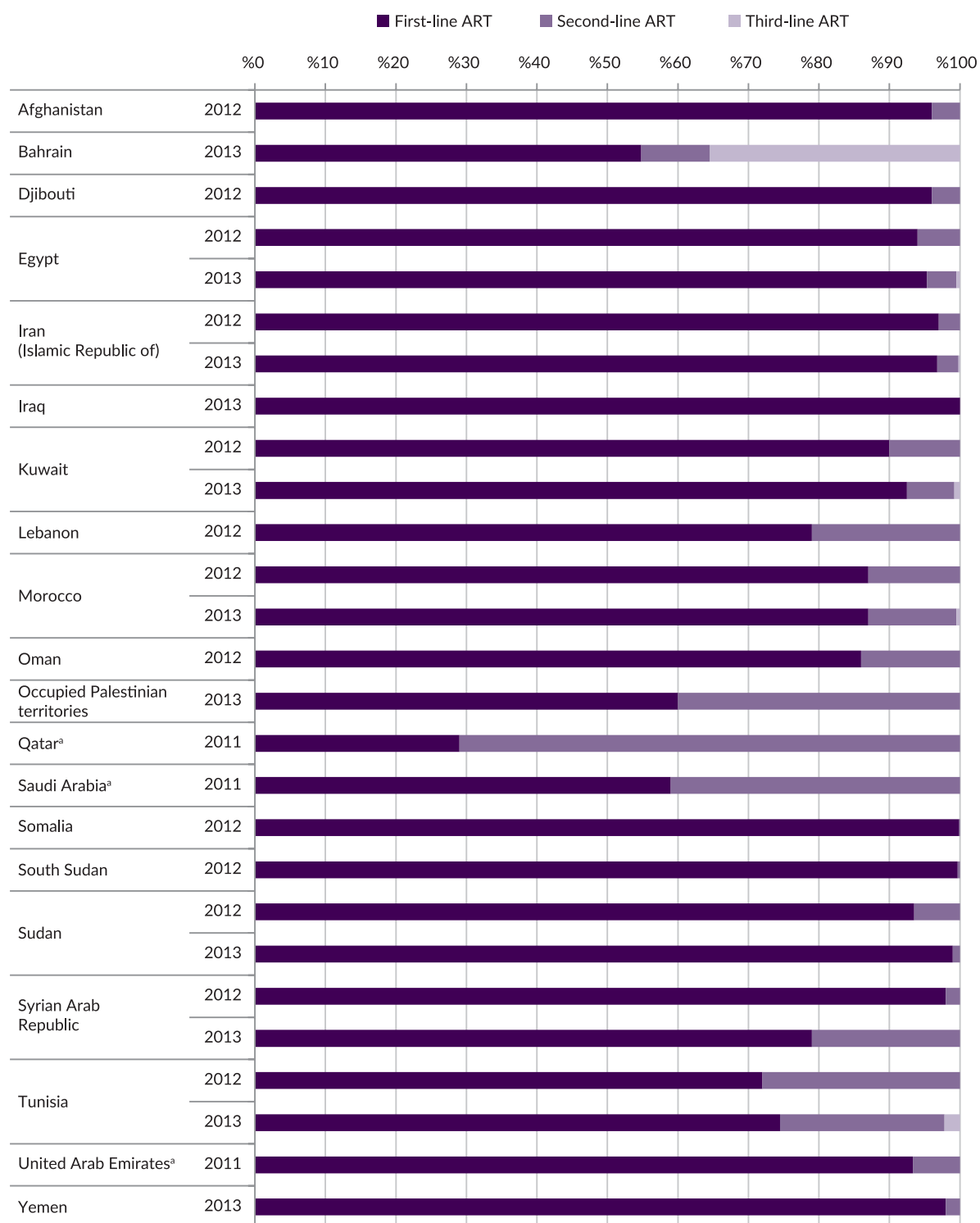
WHO recommends the strategic use of ARVs for treatment as prevention (TASP) which includes approaches such as immediate ART initiation for people living with HIV in serodiscordant relationships regardless of CD4 count, all TB-HIV coinfecting patients and HIV-hepatitis B virus (HBV) coinfecting people with severe chronic liver disease. This is based on accumulating evidence that early treatment reduces HIV viral load and thus the risk of transmission, in addition to reducing the risk of TB and other complications of HIV and AIDS (28).

Most countries of the region have guidelines recommending ART initiation irrespective of CD4 count for TB-HIV and HIV-HBV coinfection.

### 3.3.6 Access to first-, second- and third-line regimens

The majority of people receiving treatment including children are receiving first-line regimens based on triple combinations of a non-nucleoside reverse-transcriptase inhibitor (NNRTI) plus two nucleoside reverse-transcriptase inhibitors (NRTIs) (Fig. 7). In 2012, stavudine (d4T) was still being used in several countries as part of the first-line treatment (see section 3.3.7). Seven countries have included protease inhibitors such as atazanavir/ritonavir (ATV/r), lopinavir/ritonavir (LPV/r) or saquinavir (SQV) as part of the adult first-line regimen for a minority of patients. These countries are Djibouti, Islamic Republic of Iran, Kuwait, Oman, Saudi Arabia, Tunisia and the United Arab Emirates. Third-line regimens based on newer drugs such as raltegravir (RAL), darunavir (DRV) and etravirine (ETV) are only available in a few high-income countries: Kuwait, Morocco, Oman, Tunisia and Saudi Arabia.

It is probable that many patients receiving first-line treatment are not adequately assessed for treatment failure and appropriately switched to second-line regimens. The main reason is lack of availability and accessibility to CD4 count and viral load testing, especially in resource-limited countries with high numbers of people requiring and receiving treatment (see section 4.1). Identification of possible treatment failure based on clinical and immunological staging relies on the skills of health care providers who should take prompt action based on clinical suspicion. This may not occur systematically and patients who are failing treatment may be missed. Conversely, individuals identified with immunological failure may actually have adequate virological suppression and be switched unnecessarily to second-line regimens. The limited use of viral load testing has been identified as a key reason for the lower than expected rate for switching from first- to second-line ART regimens in resource-limited settings (3).



<sup>a</sup>Data for 2011.

Source: WHO Global ARV surveys 2012, 2013 and 2014. In 2013, five countries (Egypt, Islamic Republic of Iran, Kuwait, Morocco and Tunisia) reported use of third-line regimens for <3% of the total people receiving ART. Bahrain reported 36% receiving third-line regimens. Data is not available for Jordan, Libya and Pakistan.

**Fig. 7. Proportion of first-, second- and third-line ART regimens in adults (15+ years) receiving treatment, 2012–2013**

### 3.3.7 Access to improved ART regimens

#### Phasing out d4T

In 2010, WHO recommended that countries shift away from using d4T because of the long term toxicity and side effects. Six out of the seven countries with the greatest burden of people requiring ART have national plans on phasing out d4T, including Djibouti, Islamic Republic of Iran, Morocco, Somalia, Sudan and Yemen (the exception is Pakistan). Between 2011 and 2012, Morocco and Sudan reduced the proportion of people on d4T-based regimens by up to half.

From 2011 to 2012, Sudan saw a reduction from 28% to about 10% in the proportion of people on treatment receiving d4T. In Morocco, only 4% of people were receiving d4T-based regimens in 2012, compared to 16% in 2011 and none in 2013. Most countries that were still using d4T in 2013 planned to completely phase-out its use over the next few years. The Islamic Republic of Iran plans to phase out use of d4T completely in 2015, while Sudan will continue to have about 2.5% of total regimens being d4T-based combinations in the short-term.

#### TDF-based first-line regimens in adults

WHO recommends tenofovir disoproxil fumarate (TDF)+ lamivudine (3TC) or emtricitabine (FTC) + efavirenz (EFV) as the preferred first-line option for adults, pregnant women, TB-HIV and TB-HBV coinfecting patients. This regimen allows simplification of national treatment formularies and procurement, harmonization of regimens across the different range of groups who require ART, is well-tolerated and effective, and is available as a single-pill, once daily fixed-dose combination (FDC).

The TDF-based regimen was available in most countries in 2013, albeit for a minority of patients. From 2014, most countries plan to adopt this recommendation (Table 5). However, concerns remain on the relatively higher cost of the TDF-based regimen (see section 4.2).

#### LPV/r-based first-line regimen for children younger than three years

The expansion of PMTCT programmes globally has led to a reduction of new infections among children. At the same time, infants born to HIV positive mothers who do become infected have demonstrated viral resistance, most commonly to NNRTIs. In 2013, WHO strongly recommended the use of LPV/r-based regimens as the first-line option for all children younger than three years of age, regardless of NNRTI exposure. Only if LPV/r is not feasible, should treatment be initiated with a NVP-based regimen. This is based on balancing considerations of feasibility with the superiority of LPV/r-based regimens for young children, who have high viral replication, high risk of disease progression and rapid infant growth.

In 2013, very few countries in the Region had national guidelines for the provision of LPV/r-based regimens for children younger than 2 years of age, following the 2010 WHO guidelines. From 2014, nearly all will adopt the 2013 WHO recommendations. Several challenges continue to exist: procurement of paediatric formulations for the relatively few number of HIV-infected infants and children, concerns over the cold chain requirements of LPV/r, lack of palatability of the paediatric formulation, lack of fixed dose combinations and interaction with TB medications. Several countries reported providing treatment

Table 5. National recommendations for the preferred first-line ART regimens in adults, adolescents and pregnant women in selected countries, 2013–2014

Adults and adolescents		Pregnant women	
Current recommendation as of September 2013	Planned from 2014	Current recommendation as of September 2013	Planned from 2014
<b>TDF+3TC (or FTC)+EFV</b>	<b>TDF+3TC (or FTC)+EFV</b>	<b>TDF+3TC (or FTC)+EFV</b>	<b>TDF+FTC+EFV</b>
Afghanistan	Afghanistan	Afghanistan	Afghanistan
Lebanon	Lebanon		Lebanon
	Morocco		Morocco
	Pakistan		Pakistan
	Oman		Oman
	Sudan		Sudan
	Syrian Arab Republic		Syrian Arab Republic
	Tunisia		Tunisia
<b>AZT<sup>a</sup>+3TC+EFV</b>	<b>AZT+3TC+EFV</b>	<b>AZT+3TC+EFV</b>	<b>AZT+3TC+EFV</b>
Iraq	Iran (Islamic Republic of)	Iran (Islamic Republic of)	Iran (Islamic Republic of)
Iran (Islamic Republic of)	Iraq	Oman	Yemen
Morocco		Pakistan	
Pakistan		Yemen	
Oman			
Sudan		<b>AZT+3TC+NVP<sup>b</sup></b>	<b>AZT+3TC+NVP</b>
Tunisia		Iraq	Iraq
Yemen		Sudan	
		Syrian Arab Republic	
<b>AZT+3TC+NVP</b>	<b>AZT+3TC+EFV (or NVP)</b>	<b>AZT+3TC+LPV/r</b>	<b>AZT+3TC+LPV/r</b>
Syrian Arab Republic	Yemen	Lebanon	Lebanon
		Morocco	
		Tunisia	

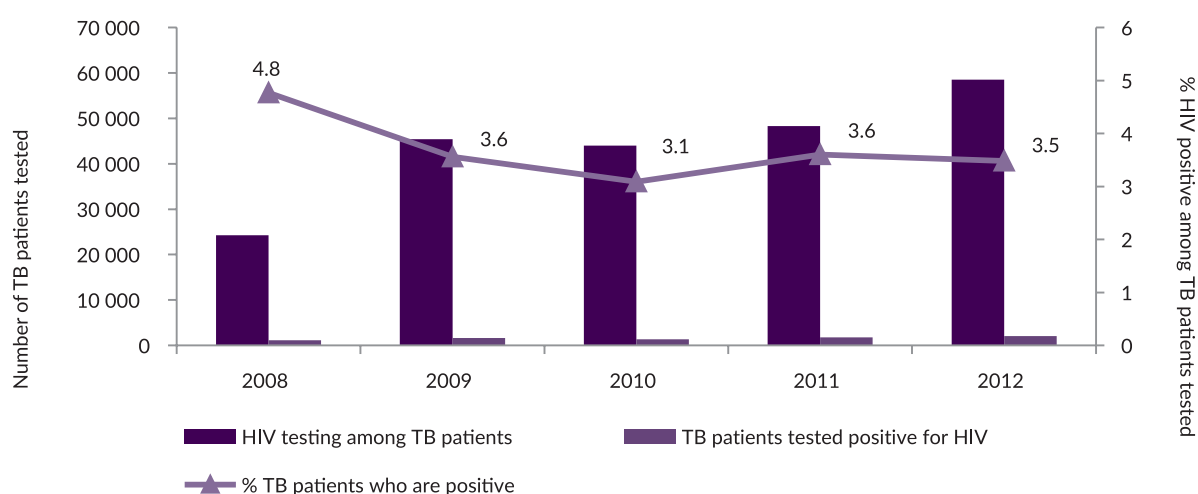
<sup>a</sup>zidovudine<sup>b</sup>nevirapine

Source: Responses to the WHO country ART policy survey carried out during the regional workshop for dissemination of the new WHO consolidated guidelines on HIV treatment and care, Casablanca, Morocco, 9–10 September 2013.

to children younger than 3 years of age in 2012: Afghanistan (2 children), Djibouti (31), Egypt (4), Islamic Republic of Iran (42), Morocco (86), Oman (2), Syrian Arab Republic (1) and Yemen (20).

### 3.3.8 Reducing TB-HIV mortality and morbidity

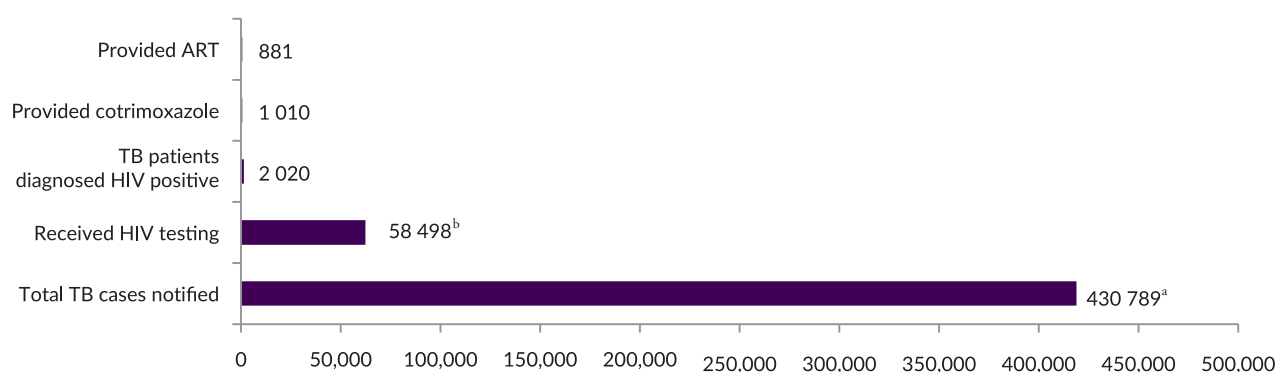
In 2012, 1.1 million (13%) of the 8.6 million people who developed TB worldwide were HIV-positive, with two-thirds of the global burden in the African Region. Within the Eastern Mediterranean Region, TB prevalence was an estimated 1 100 000 (730 000–1 600 000), with 63% of cases (all forms) detected. HIV testing among TB cases improved between 2008 and 2012, although only one in five persons who has TB knows their HIV status (Fig. 8). In 2012, about 4200 died from HIV-associated TB in the Region (29).



Source: GARPR 2013.

**Fig. 8. Number of TB cases tested and proportion who are HIV positive in the Eastern Mediterranean Region, 2008–2012**

Fig.9 illustrates the regional TB-HIV prevention and care cascade, mirroring the HIV care cascade. Of 430 705 total TB cases in 2012 (new and retreated), 14% had tested and knew their HIV status. Of those who received HIV testing, 3.5% with TB infection were diagnosed HIV positive. More than half (69%) of the TB-HIV coinfecting patients were provided cotrimoxazole prophylaxis (CPT), and 48% were provided ART. Approximately 15 012 people living with HIV were screened for TB and a minority (243 persons) provided with isoniazid prevention therapy (IPT) (29). There was considerable variability among countries in the proportion of TB cases that tested HIV positive, ranging from no HIV infections in occupied Palestinian territories and Jordan, to about 11% in Djibouti and 18% in Islamic Republic of Iran.



<sup>a</sup>Total TB cases notified in 2012 include all new and retreated cases.

<sup>b</sup>TB cases with known HIV status.

Source: Global tuberculosis report 2013 (29).

**Fig. 9. The TB-HIV prevention and care cascade: from TB case notification to HIV diagnosis and co-management in the Eastern Mediterranean Region, 2012**



Despite increasing TB-HIV collaborative activities in most countries, the TB-HIV prevention and care cascade faces challenges with HIV case finding among TB notified cases due to weak PITC, lack of availability and decentralization of TB-HIV testing and treatment services, shortages of TB and HIV test kits, and population movement due to migration and conflict which exacerbates the challenges of cross-border prevention and management among refugees. As an illustration, the detection of 46 new TB cases (five of which were multidrug resistant) among Syrian refugees by March 2013 in Jordan resulted in challenges with financing, prevention and treatment of TB in a country that had limited budgets for TB control and had seen only two TB-HIV coinfecting cases in the last 10 years (6). This situation is not uncommon in the Region as many countries have large population displacement due to local and regional insecurity.

## 3.4 Monitoring the quality of ART care

### 3.4.1 Drug stock-outs

ARV drug stock-outs at treatment sites are a serious programme issue. Disruption of drugs interferes with patient adherence to treatment, and increases the risks of emergence of HIV drug resistance, development of opportunistic infections and mortality, as well as the costs of travel for frequent follow-up, among other problems. The continuous supply of drugs continues to be a major challenge in most countries worldwide with different strategies used to avoid overt stock-out (2). Substitution of specific drugs within the ART regimen, transferring medicines across treatment facilities and regions, reducing the supply of drugs from the usual one to two months to several weeks, and emergency procurement of drugs are some of the interim procedures instituted.

In 2012, of the 11 countries reporting on ARV drug stock-outs, three (Djibouti, Oman and Tunisia) had experienced interruption of at least one of the ART drugs (Table 6) (see section 4.3). In 2013, all four ART clinics in Tunisia reported having at least one drug stock-out necessitating frequent substitutions in treatment regimens for adults. In children, however, dual-ARV therapy was given sometimes when there were drug stock-outs (9).

Although Libya did not report in 2012, conflict in 2011 disrupted ARV supplies for more than six months leading to an acute emergency for people taking treatment. For those who could not purchase drugs from neighbouring countries, patients reportedly shared ARV drugs and relied on partial one- or two-drug regimens. Insecurity continues to affect drug supplies in 2013 (9). Similarly, Sudan did not report drug interruption in 2012. However, qualitative interviews with treatment sites showed that several clinics had experienced stock-out of some ARVs. During this period, health care providers substituted medications resulting in frequent changes of ART regimens for patients or them being supplied with only two weeks of treatment resulting in high transport cost and frequent visits to ART sites<sup>23</sup>. Patients and health care providers report experiencing frequent stock-outs of ARV drugs.

The issue of ensuring consistent ARV drug supplies is a common problem in the Region, even for high-income countries. Despite having a wide range of ARVs available for first-line treatment in Bahrain, drug stock-outs occur and those who have side-effects have little alternative options (9).

<sup>23</sup> Federal Ministry of Health, Sudan, unpublished data, 2013

Table 6. Monitoring indicators for quality of treatment services, by country, 2012–2103

Countries	ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (%)		Retention in ART care at 12 months (%)		Retention in ART care at 24 months (%)		Retention in ART care at 60 months (%)		Virological suppression after 12 month of ART (%)	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
Afghanistan	–	–	222/232 (95.7)	All (96.2) Male (93.9) Female (100)	–	All (95) Male (92.9) Female (100)	–	–	–	–
Bahrain	–	–	–	–	–	–	–	–	–	–
Djibouti	5/27 (18.5)	–	135/141 (95.8)	186/231 (80.5)	86/118 (72.9)	–	136/459 (29.6)	–	–	–
Egypt	–	–	450/478 (94.1)	490/670 (73.1)	–	–	–	–	–	–
Iran (Islamic Republic of)	–(100)	–	Initiated in 2011: 1 045/1229 (85.0) Initiated in 2010: 694/835 (83.0) Initiated in 2009: 418/639 (83.0) Initiated in 2008: 333/529 (78.0)	All (82.1) Female (90.8) Male (80.5)	Initiated in 2010: 644/835 (77.0) Initiated in 2009: 473/639 (74.0) Initiated in 2008: 369/529 (70.0) Initiated in 2007: 269/382 (70.0)	–	<b>48-month retention in ART care</b> Initiated in 2008: 322/529 (61.0) Initiated in 2007: 214/382 (56.0) Initiated in 2006: 167/277 (60.0) Initiated in 2005: 107/166 (64.0)	–	–	–
Iraq	–	–	–	–	–	–	–	–	–	–
Jordan	–	–	57/19 (300.0)	16/16 (100)	–	–	–	–	– (90.9)	–
Kuwait	–	–	2011: (89.0)	Initiated in 2011: 23/25 (92.0) Initiated in 2012: 11/12 (91.7)	–	–	–	–	– (92.0)	–
Lebanon	– (0)	–	– (95.1)	–	–	–	–	–	–	–
Libya	–	–	–	–	–	–	–	–	–	–
Morocco	0/15 (0)	0/15 (0)	638/701 (91.0)	– (90.8)	436/517 (84.3)	–	420/510 (82.4)	–	–	–
Oman	1/15 (6.7)	–	75/101 (74.3)	–	55/58 (94.8)	–	28/28 (100)	–	– (35.0)	–
Pakistan <sup>a</sup>	0/17 (0)	–	–	–	–	–	–	–	–	–

Table 6. Monitoring indicators for quality of treatment services, by country, 2012–2103 (concluded)

Countries	ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (%)		Retention in ART care at 12 months (%)		Retention in ART care at 24 months (%)		Retention in ART care at 60 months (%)		Virological suppression after 12 month of ART (%)	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
Occupied Palestinian territories	0/2(0)	–	21/21(100)	–	–	–	–	–	–	–
Qatar	–	–	–	–	–	–	–	–	–	–
Saudi Arabia	–	–	–	530/530 (100)	–	–	–	–	– (97.0)	–
Somalia	0/10 (0)	–	312/371 (84.1)	National: (81.5) South Central zone: (83.3) Puntland: (81.4) Somaliland: (81.3)	175/215 (81.4)	National: (70.6) South Central zone: (70.6) Puntland: (68.6) Somaliland: (71.3)	20/39 (51.3)	–	–	–
Sudan <sup>b</sup>	0/30 (0)	–	680/1 094 (62.2)	2012: (64.2) 2013: (69.1)	306/599 (51.1)	2012: (57.8) 2013: (55.5)	–	2012: (39.2) 2013: (42.5)	–	–
Syrian Arab Republic	–	–	–	–	–	–	–	–	–	–
Tunisia	1/4 (25.0)	4/4 (100)	144/150 (96.0)	105/115 (91.3)	49/54 (90.8)	67/89 (75.3)	25/40 (62.5)	44/77 (57.1)	–	40/60 (66.7)
United Arab Emirates	–	–	–	–	–	–	–	–	–	–
Yemen	0/5 (0)	–	257/423 (61.0)	Initiated in 2012: 152/197 (77.0) Initiated in 2009: 85/140 (62.0) Initiated in 2010: 257/423 (61.0)	–	–	–	–	–	–

<sup>a</sup>National data is not available on retention in ART care. Cascade analysis exercises in Punjab province found 81.7% cumulative retention on ART (1086 currently receiving ART out of 1328 people ever started ART) in 2012 (Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013).

<sup>b</sup>Federal Ministry of Health, Sudan, unpublished data, 2013.

Source: Data extracted from GARPR 2013, regional update 2012 (7), UNGASS country narrative reports 2010, 2012 and 2014 (9).

### 3.4.2 Retention in ART care

Average retention rates tend to reduce over time from about 86% at 12 months, to 81% at 24 months and 73% at 60 months, as indicated by data reported for 2013(1). Of the 13 countries with data available on retention in care at 12 months of ART, six countries had at least 85%<sup>24</sup> of patients still in care (Table 6). In Sudan, 64.2% of people starting treatment were retained in care at the end of 12 months in 2012, although this improved slightly to 69.1% in 2013(9). In Oman, 12-month retention in ART care was 78% (2012). Reported issues related to high loss from ART care in this high-income setting include patients leaving the country and socioeconomic problems such as costs of transport to get to ART centres. High attrition rates, either due to death or loss to follow-up, occurred in Sudan and Yemen where only six out of 10 patients who initiated ART would still be retained after 12 months of treatment.

Longer-term retention rates at 24 months of treatment showed wide variability from 95% in Afghanistan to 55% in Sudan. Little data is available in the Region for longer-term retention rates at 60 months of treatment. Except for Morocco and Oman, five-year retention rates ranged from 43% in Sudan to 57% in Tunisia. Although it is challenging to draw conclusions on the overall regional picture due to small patient numbers in several countries, the overall experience with retention in ART care mirrors that found globally, which is gradual loss of patients over time.

### 3.4.3 Monitoring the treatment cascade

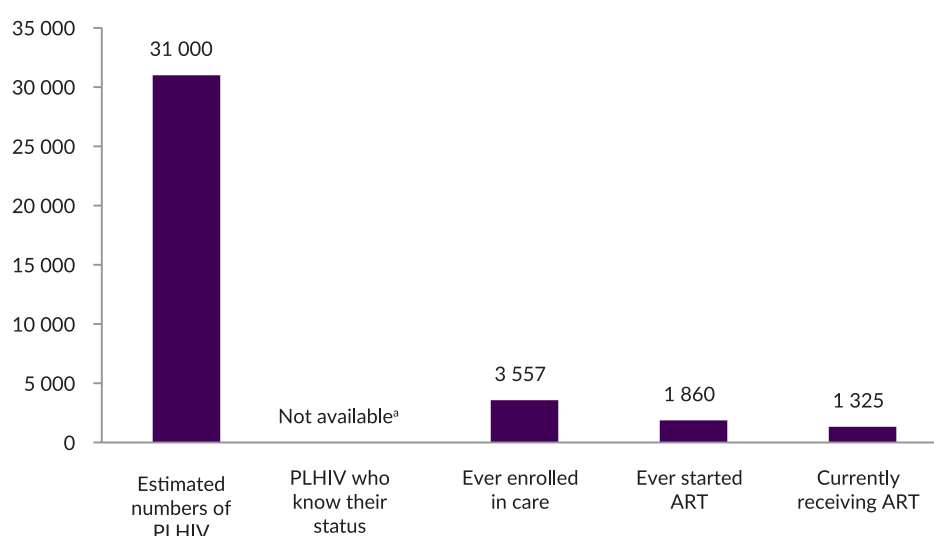
Detailed analyses of the HIV treatment cascade in five countries provide important contextual information on monitoring the continuum of care, with the input of health care providers, programme managers and affected communities. These exercises help to identify issues and lessons learnt within the care cascade for reprogramming and fine-tuning of policies and guidelines. As there are differences in routine monitoring and evaluation systems among countries, the definitions of indicators used may vary between countries. Reporting of data for HIV testing, in particular, is a major weakness.

#### Somalia

Fig. 10 shows that in Somalia, of all people who ever enrolled with the treatment programme, only 52% ever initiated ART and 71% of them were currently receiving drugs in 2012<sup>25</sup>. Retention in care in the early phase of treatment is high. More than 80% of all patients were retained at 12 and 24 months after treatment initiation, but this reduces to half by five years of ART (Table 6).

<sup>24</sup> Part of HIV drug resistance monitoring using early warning indicators on retention in ART care at 12 months of initiation. WHO recommends a minimum of 85% retention at 12 months.

<sup>25</sup> Ministry of Health, Somalia, unpublished data, 2013.



<sup>a</sup>Cumulative reported HIV positive cases till end of 2011 is 3 641.

Source: Ministry of Health, Somalia, unpublished data, 2013.

**Fig. 10. Somalia HIV treatment cascade, 2012**

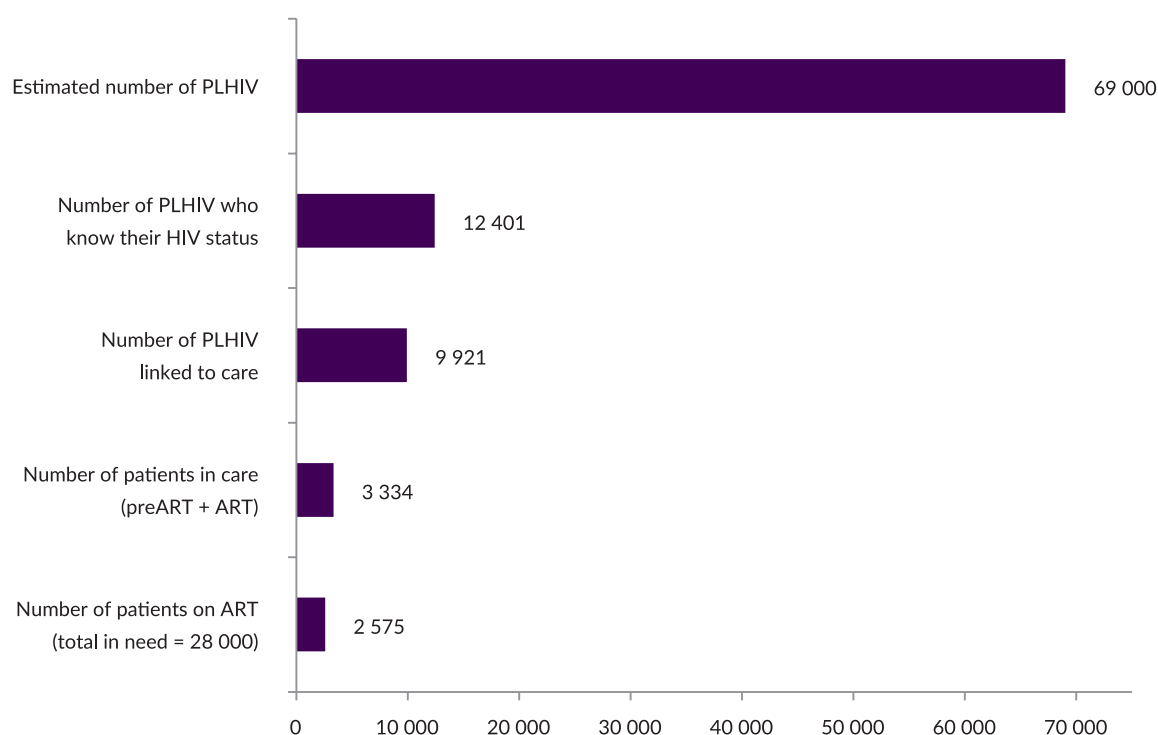
## Sudan

In Sudan, about 80% of people diagnosed HIV positive between 2006 and 2012 enrolled with care services located in 32 centres mostly in urban areas (Fig. 11)<sup>26</sup>. One-third continued with care (pre-ART and ART), of whom 77% are receiving treatment. There is substantial attrition between enrolment in care and ART initiation (which is the pre-ART stage). Some ongoing issues are the lack of CD4 count testing, weak capacity for clinical staging, and late diagnosis and presentation resulting in loss of patients even before starting ART. When patients are considered eligible clinically for ART, other reasons delay the start of treatment which include strict requirements to adherence preparation checklists (completed three adherence preparation sessions, disclosed status to family member, demonstrated good adherence to co-trimoxazole, and so on) as well as misunderstanding of clinical guidelines (such as deferral of ART initiation until the six months of TB treatment is completed).

Only 62% and 51% of those who initiate ART remain in care at the end of 12 and 24 months, respectively (Table 6). About one in five patients are estimated to die within the first year of ART. Approximately half of all loss from ART is attributed to deaths of patients, while the other half is due to loss to follow-up (some of which could also be due to patients dying at home or other services). Several strategies established to reduce attrition and track patients have proven to be useful in enhancing retention in care. These include patient appointment registers, reminders and contacts, home visits to defaulting patients and peer treatment supporters.

Among the challenges of ensuring the continuum of care are CD4 monitoring not being perceived as “meaningful care” by patients, a lack of decentralized services, and the frequent need for monthly visits for drug refill even for stable patients. The vertical structure of the HIV programme and lack of ownership and integration with other health programmes has meant that HIV services are not regarded as being part

<sup>26</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.



Note: The analysis was based on data from 2006 to 2012 and people living with HIV diagnosed prior to 2006 and still alive are not taken into account. People enrolled in care are operationally defined as people living with HIV ever enrolled in care from 2006 in care and treatment sites. People receiving ART follow the definition used for GARPR.

Source: Federal Ministry of Health, Sudan, unpublished data, 2013.

Fig. 11. The HIV test-treat-retain cascade, Sudan, April 2013

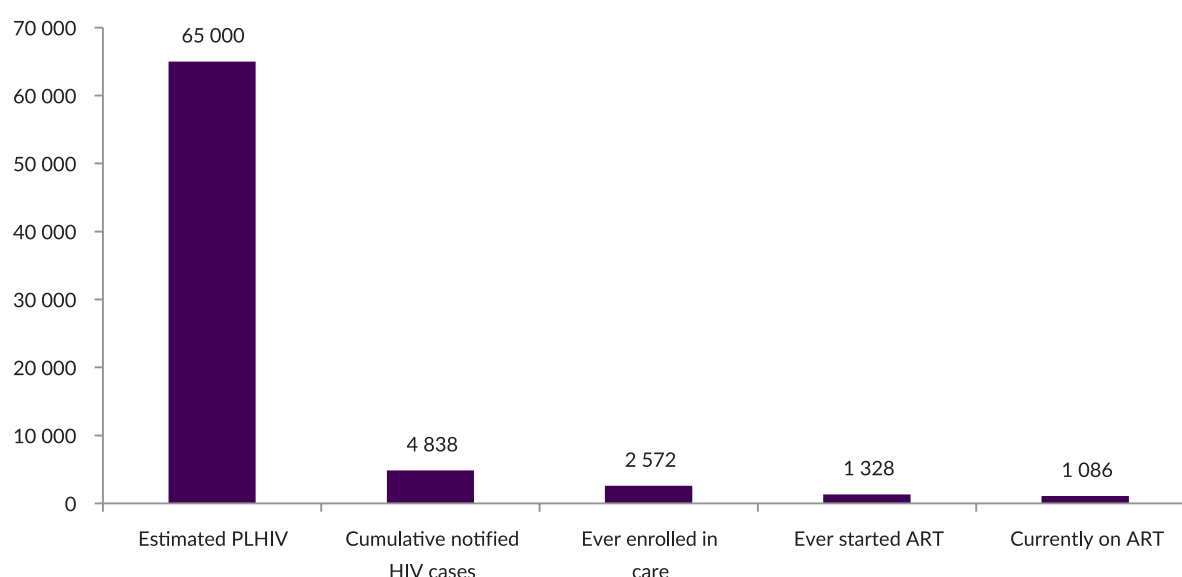
of the essential health package for TB patients and pregnant women. Quality assurance management for HIV laboratory services (HIV diagnosis and CD4 count testing) are not well-defined as they are not under the oversight of national laboratory systems. CD4 count machines are non-functional for many months. In addition, supply management for HIV testing and ART commodities are weak, complicated by inadequate coordination between HIV and procurement/supply officers at state level and within the facility among ART and pharmacy staff. This leads to stock-out of HIV test kits as well as short supply of ARV drugs.

## Pakistan

Approximately 60% of the population of Pakistan resides in Punjab province, which is estimated to have the highest burden of HIV in the country<sup>27</sup>. Only 7.5% of the estimated 65 000 people living with HIV<sup>28</sup> people have had a test done and know their status. Half of them have ever enrolled with HIV care and treatment services and a further 51% have ever started ART. For patients receiving ART, 82% were currently still on treatment at the end of May 2013 (Fig. 12). Limited data from chart reviews indicate that about 52–74% of patients are eligible for treatment at the time of enrolment at ART sites. However,

<sup>27</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

<sup>28</sup> There are no official estimates for Punjab province, Pakistan. This estimate is based on applying the approximate population proportion residing in Punjab (60% of Pakistan) to the total estimated numbers of people living with HIV in the country (110 000).



Note: Estimates for numbers of people living with HIV are for 2012. Notified HIV cases are cumulative till September 2013. Ever enrolled in care and ever started on ART numbers are cumulative till May 2013.

Source: Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.

Fig. 12. Treatment cascade analysis for Punjab province, Pakistan, 2013

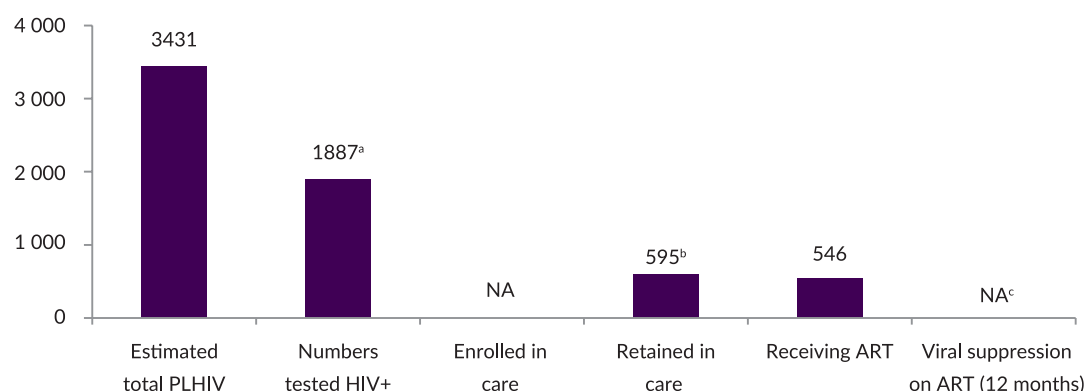
only half of these ever initiate ART. Accurate information on retention in care through (longitudinal) cohort analysis is not available.

The cascade analysis identified similar structural, patient, cultural and stigma barriers as with other countries. At the same time, several lessons were identified where the programme could take steps to improve the efficiency and sustainability of the HIV programme. These include addressing issues of quality of service provision, access to CD4 counts, creating demand for services and testing particularly among key populations, and decentralisation of services. Patient tracking systems and community support for long-term treatment adherence is an area which requires investment. The exercise further identified gaps in the prevention programme for people who inject drugs, which is the major transmission route for new infections in the country.

## Tunisia

HIV care cascade analysis suggests, that in Tunisia, similar to other countries, there is a major loss of people living with HIV from the point of diagnosis to being retained in care (Fig.13). Of the 1887 cumulative HIV cases reported from 1985 to 2013, there were 577 (31%) reported deaths. Only 46% ( $n = 595$ ) of those who may be still living, approximately 1300 people, had contact with HIV care services in 2013 and of these, 92% ( $n = 546$ ) were receiving ART.

Although HIV drug resistance monitoring and surveillance have not yet been established in Tunisia, current programme reports allow some interpretation. Retention in ART care at the end of 2013 was 96% ( $n = 62/68$ ), 87% ( $n = 47/54$ ) and 76.7% ( $n = 23/30$ ) at 12, 24 and 60 months, respectively; 12 and 24 month retention rates were consistently high for 2011 and 2013 at about 96% and 90%, respectively. However, only about two-thirds of ART patients remained in care at 60 months.



<sup>a</sup>Cumulative HIV/AIDS cases reported since 1985 till end of 2013.

<sup>b</sup>Retained in care defined for this analysis as “registered for HIV care at least once during 2013”.

<sup>c</sup>Data available only for 60 people who had initiated treatment and had viral load testing at 12 months in 2012–2013. The proportion of people on 12 months of ART with viral suppression < 1000 copies/ml was 66.7% ( $n = 40$ ). In 2013, 64% ( $n = 290/457$ ) of people receiving ART (for various durations of time) who had viral load testing were found to have achieved viral suppression.

Source: UNGASS country narrative report 2014 (9).

**Fig. 13. HIV care cascade, Tunisia, 2013**

Although retention in ART care in the short term is excellent, virological suppression is suboptimal (66.7%). This suggests possible issues with patient adherence, suboptimal ARV regimens, treatment interruptions or prior ARV exposure (such as through ARV drug prescriptions in the private sector), among other reasons. All four treatment sites in the country reported ARV stock-out in the previous 12 months, necessitating substitution of patient ART regimens in 2013. Among children taking ART, some had dual ARV therapy when drug stock rupture occurred.

There is a clear need to establish HIV drug resistance monitoring using early warning indicators. HIV surveillance for pre-treatment and acquired drug resistance should also be established. The updated 2014 WHO HIV drug resistance protocols provide guidance on nationally representative cross-sectional surveys (30,31).

### 3.4.4 Viral load suppression

WHO recommends phasing in national capacity for viral load testing to monitor response to ART in adults and children, using the threshold of 1000 copies/ml to define treatment failure. As of June 2014, Pakistan and Yemen now recommend routine viral load monitoring among ART patients, although these guidelines may not have been implemented fully.

There is lack of information on viral suppression among people receiving treatment in the Region as many countries currently do not have laboratory capacities for viral load testing (see section 4.1). Available data from four high-income countries in the Region show very high viral suppression rates (more than 90% of those receiving first-line treatment at 12 months), with the exception of Oman in 2012 (Table 6). In these countries, routine virological monitoring and genotype resistance testing is widely available. Kuwait, for example, has adopted the individual approach to treatment where patients are provided CD4 counts, viral load and HIV drug resistance testing before starting ART. The treatment regimen is defined according to the results (9).



### 3.4.5 HIV drug resistance surveillance and monitoring

Since the development of the first global strategy on monitoring HIV drug resistance in 2004, WHO and its partners in the HIV drug resistance network HIV ResNet have supported implementation of surveillance and monitoring activities using standardized protocols. HIV drug resistance surveillance and monitoring help to identify factors that lead to the emergence of drug resistance (through early warning indicators) and provide data to support public health decision-making on the optimal first-and second-line ART regimens options.

In 2012, of the 14 countries responding to the WHO country ART survey, only the Islamic Republic of Iran and Jordan had established HIV drug resistance surveillance among newly or recently infected individuals, and for acquired resistance among patient receiving ART, along with monitoring of early warning indicators. Lebanon, Somalia and Yemen are in the nascent stages of establishing HIV drug resistance monitoring using the early warning indicators. Morocco and Pakistan are monitoring one of the five early warning indicators, on pharmacy drug stock-out (7). Surveillance of acquired and transmitted drug resistance has been conducted in Saudi Arabia (2010) and Islamic Republic of Iran (2011), respectively. Acquired HIV drug resistance surveys in Saudi Arabia on 1314 patients starting ART showed that 0.3% had resistance at baseline and 97% had undetectable viral load (successful viral suppression) after 12 months of treatment. In the transmitted HIV drug resistance survey in the Islamic Republic of Iran, of the 51 recently-infected individuals surveyed, only two (3.9%) had resistance to NRTI (7).

# 04

Issues affecting  
effective  
implementation  
and scale-up



## 4. Issues affecting effective implementation and scale-up

### 4.1 Essential laboratory and diagnostics for HIV care

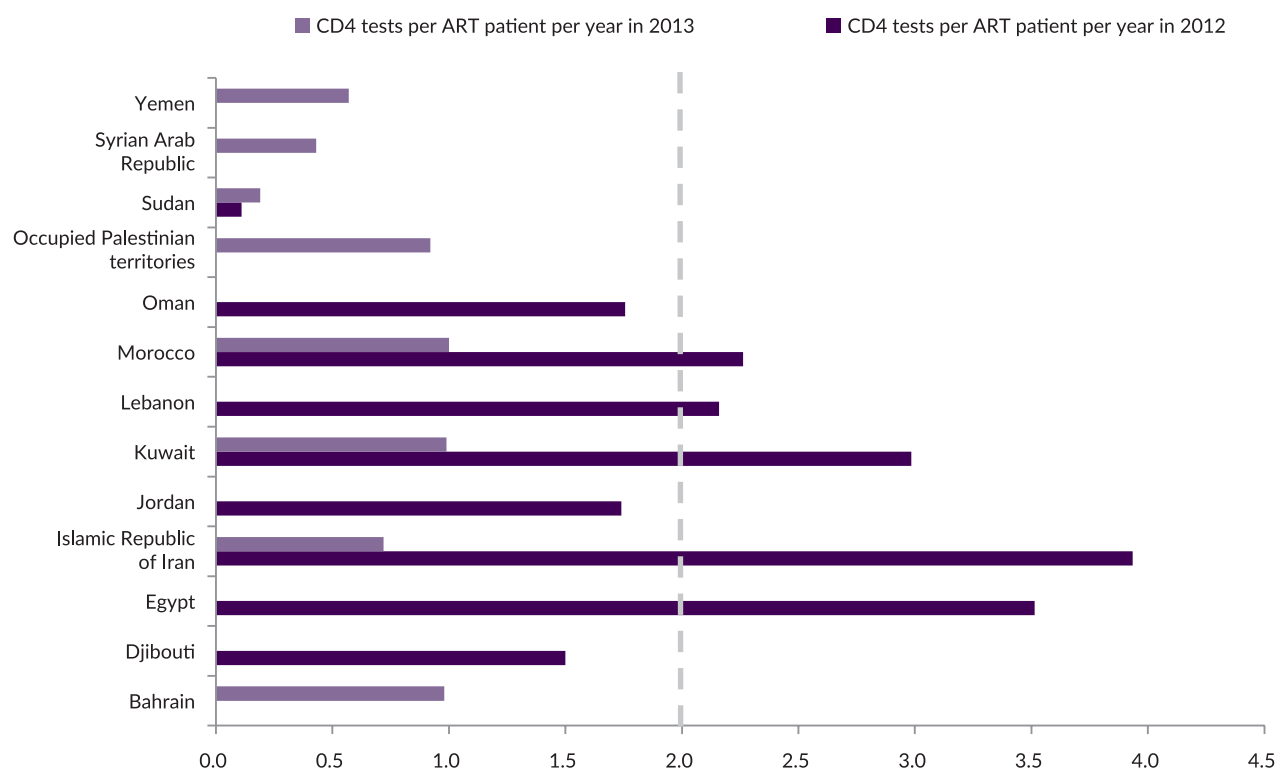
HIV diagnostic and laboratory capacities are a part of essential health services, and should be integrated within the national laboratory system. In addition, accurate and reliable testing services require robust quality assurance management systems. The 2013 WHO consolidated guidelines include routine CD4 count testing at baseline and every six months, and an HIV viral load test at six months after initiating ART, with annual virological monitoring thereafter. In the Region, HIV laboratory capacities differ considerably for HIV testing, early infant diagnosis, CD4 count, and viral load and HIV drug resistance testing.

All countries have capacity for laboratory-based HIV testing. However, newer diagnostics which simplify testing, such as rapid (point-of-care) tests, are used in very few countries, mainly to support community-based testing approaches for key populations. In a few countries, HIV testing algorithms depend only on laboratory-based ELISA and Western blot tests. In most countries where community-based testing using rapid tests is allowed, reactive tests require confirmation using ELISA or Western blot (13). Confirmation of reactive HIV tests usually entails blood specimens to be sent to national referral laboratories or the referral of the individual to static HTC facilities. Djibouti, Somalia and Sudan have introduced the use of three different serial rapid HIV tests in their programmes. Pakistan is currently revising the national testing strategy and algorithms to allow the use of three serial rapid tests. Provision of same-day positive results is still uncommon in the Region.

Early infant diagnosis was available in six (Djibouti, Islamic Republic of Iran, Kuwait, Morocco, Oman and Syrian Arab Republic) of the nine countries reporting on HIV laboratory capacities for 2012. In countries without the capacity for early diagnosis, infants are tested using standard HIV serological tests at 18 months of age.

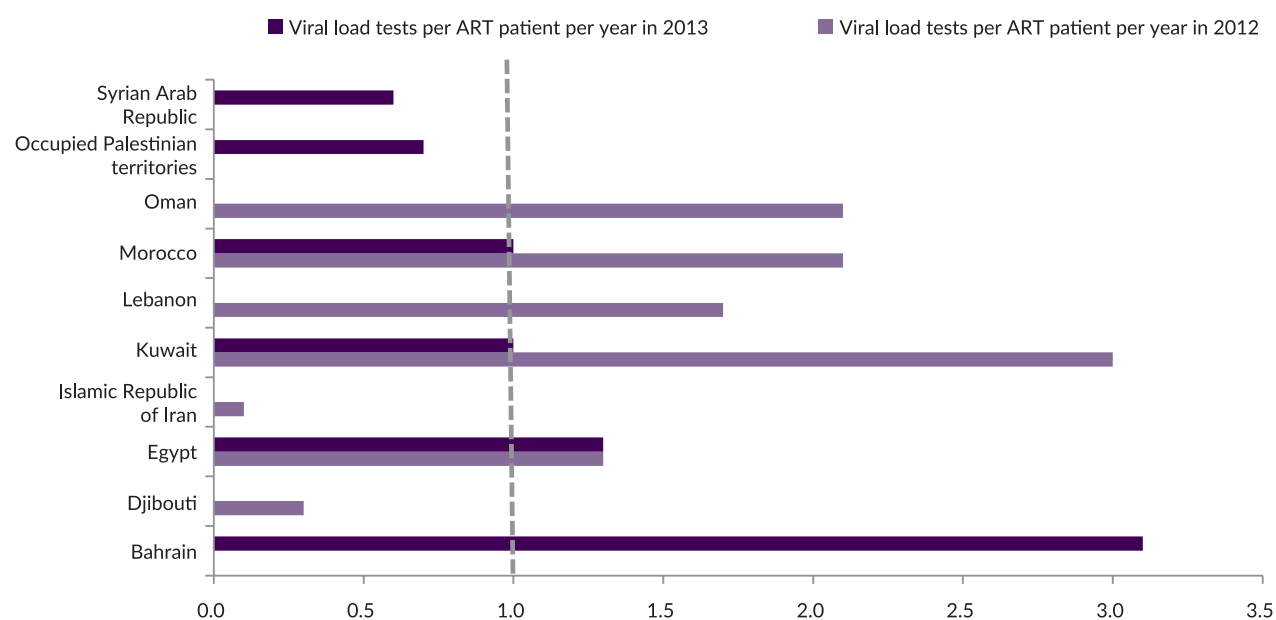
Five countries (Morocco, Lebanon, Islamic Republic of Iran, Kuwait and Egypt) provided a minimum of two CD4 count test per patient per year in 2012. Most patients receiving treatment in 2013 had at least one CD4 count test in that year, based on the number of CD4 count tests done per ART patient (Fig. 14). Laboratory-based CD4 testing is available in most countries, while point-of-care CD4 count testing capacities have been established in Djibouti, Morocco and Pakistan (1). Pakistan has initiated use of portable machines for mobile CD4 count testing, which is easy to calibrate and maintain and is operated by battery for up to eight hours. Mobile CD4 count technology allows testing at clients' homes, potentially allowing earlier and timely assessment for initiation of ART (6).

Similarly, two-thirds of the countries which reported on viral monitoring capacity in 2012 and 2013 provided ART patients with a minimum of one viral load test (Fig. 15). Capacity for virological monitoring has been, or is in the process of being, established in Djibouti, Egypt, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Morocco, Oman and Syrian Arab Republic. Although there is no data from the high-income countries within the Region, viral load testing is likely to be a part of standard practice in Bahrain, Qatar, Saudi Arabia and the United Arab Emirates. Limited or non-availability of virological testing is likely to be one of the main issues in ensuring appropriate and timely switch to second-line treatment.



Source: WHO global ARV surveys 2013 and 2014. Ratio of CD4 count tests per patient for a year is estimated as numbers of CD4 count tests reported by the country (numerator) divided by the total number of patients receiving ART (denominator) for the specified year.

Fig. 14. Ratio of annual CD4 test per patient receiving ART, 2012–2013



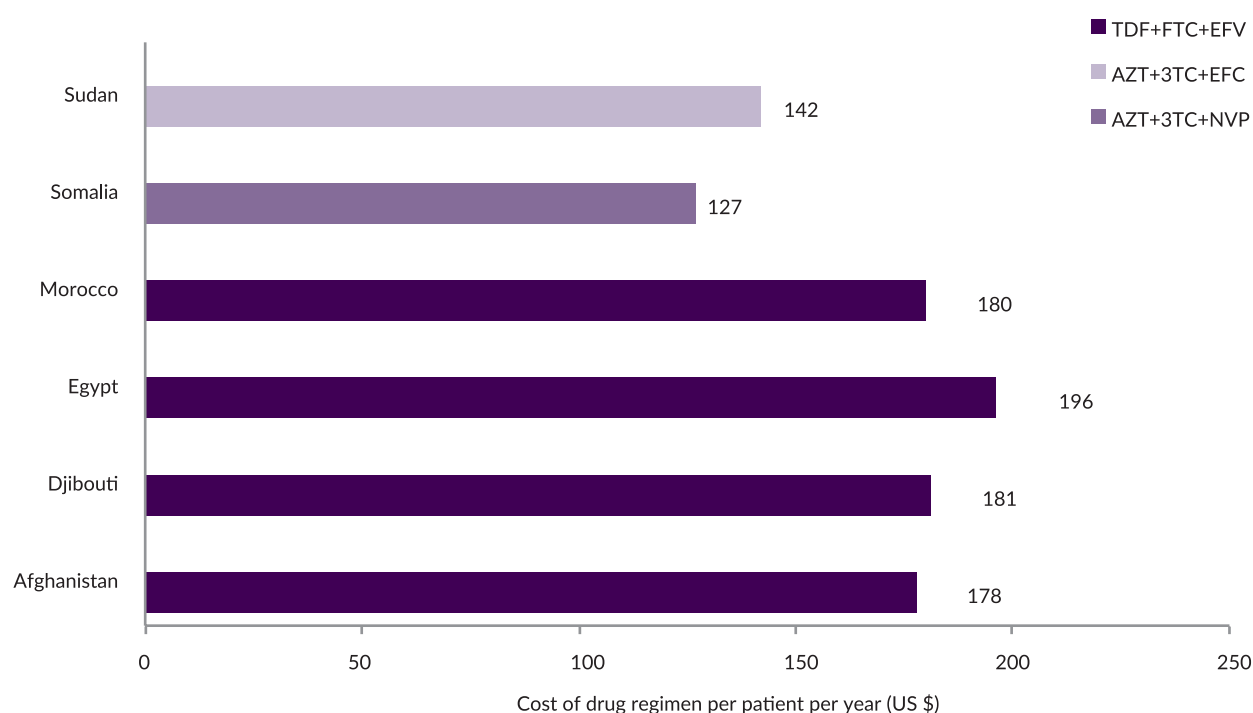
Source: WHO Global ARV survey 2013 and 2014. Viral load testing is not available in Somalia and Sudan. The ratio of viral load tests per patient for a year is estimated as the number of viral load tests reported by a country (the numerator) divided by the total number of patients receiving ART (the denominator).

Fig. 15. Ratio of annual viral load test per patient receiving ART, 2012–2013

Most countries planned to strengthen HIV laboratory capacities through a gradual expansion of services in 2014. Specific challenges for some countries, such as Somalia, Sudan and Yemen, include ensuring an uninterrupted supply for reagents, test kits and blood tubes, and the regular maintenance of equipment. The capacity of human resources to correctly use and maintain equipment and the quality assurance management systems are currently inadequate. Although CD4 count machines are available in Sudan, Somalia and Yemen, due to frequent breakdown of equipment and poor management of commodities, such as reagents and test kits, CD4 count testing is unavailable for many months each year. In Sudan, besides issues with CD4 count testing machine breakdown and maintenance, lack of space and staff capacity restricts the numbers of tests to less than 10 per day, which is a low throughput of tests done per machine<sup>29</sup>.

## 4.2 Cost of ARV drugs

Rapid adoption of the WHO-recommended preferred first-line treatment option in countries with the highest burden of ART need, and speed in achieving scale-up, will depend, in part, on reducing the purchase price of ARV drugs to as low as possible. The limited data on the costs of ARV drugs in the Region make it difficult to formulate conclusions on median prices. Fig.16 provides a comparison of the costs of TDF-based regimens for adults, currently used in small volumes (less than 5-10% of all treatment regimens), in several countries for 2012.



Source: WHO country ART survey 2013.

Fig. 16. Comparison of the cost of TDF+3TC+EFV per patient per year (US\$) with current standard first-line AZT+3TC+ EFV (or NVP) regimens in selected countries, 2012

<sup>29</sup> Federal Ministry of Health, Sudan, unpublished data, 2013.

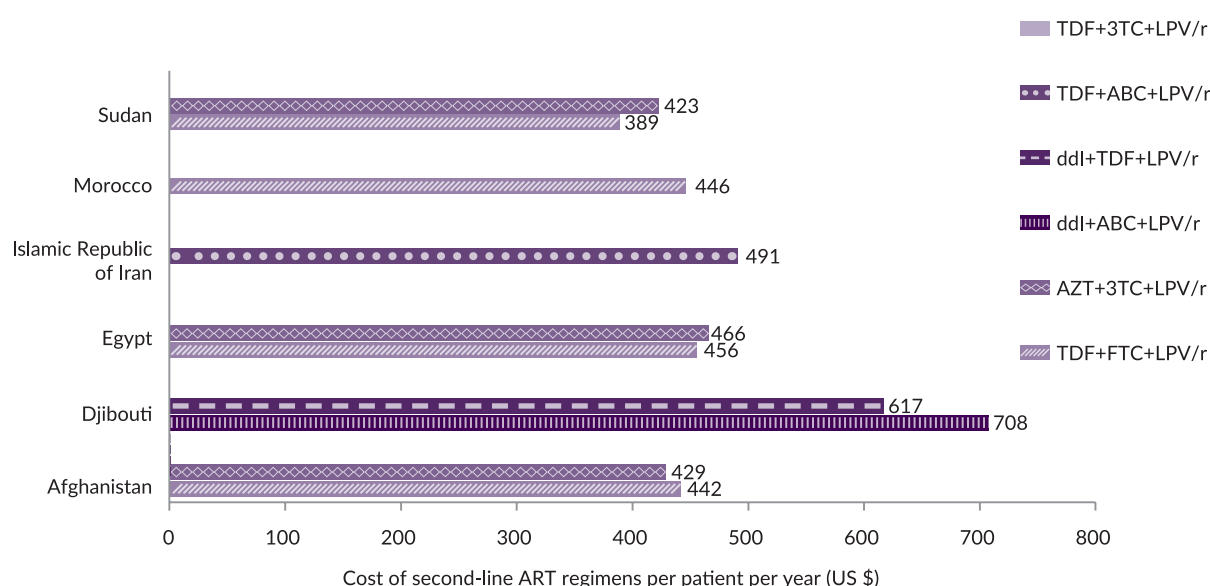
Median prices for the preferred first-line option of TDF+3TC (or FTC)+EFV as a one pill fixed-dose combination has been steadily reducing over the last few years. Maximum ceiling prices for this regimen ranged between US\$130 and US\$156, depending on economies of scale (bulk purchase), for least developed countries in 2013 (32). Data from the Latin America and the Caribbean, comprising countries with economies as diverse those in the Eastern Mediterranean Region, indicate that annual costs for a single TDF+FTC+EFV tablet in fixed-dose combination ranges between US\$158 and US\$2642, with a median price of US\$625 (33). In 2013, 98% of all ARV drugs in low-and middle-income countries were supplied by generic manufacturers at competitive prices. As more countries moved towards using TDF-based regimen as the first preferred option, the median price declined to US\$115 per person per year in the same year (1).

Second-line regimens are available in most countries in the Region, with TDF+3TC (or FTC)+LPV/r being the more common combination (Fig. 17). The annual cost of the variety of regimens per patient ranges from US\$ 389 to US\$708, with a median price of US\$446, based on data from seven countries in 2012. This is still higher than the median price paid in most low-and middle-income countries which is approximately US\$ 330 per person per year using generic drugs for second-line therapy (34). There are no data on the drug prices in high-income countries such as Bahrain, Kuwait, Saudi Arabia and the United Arab Emirates. In comparison, the cost for TDF+FTC+LPV/r in Latin America and the Caribbean ranges from US\$349 to US\$ 10 124, with a median of US\$ 3312.

With increasing use of TDF-based regimens as the preferred first-line option, most countries are likely to use AZT and other NRTI alternatives such as abacavir (ABC) and didanosine (ddI) within the second-line regimens. Data for 2012 by the Global Price Reporting Mechanism of WHO indicate that the median prices for combinations of these NRTI options with LPV/r were between US\$474 (AZT+3TC+LPV/r) and US\$816 (ABC+ddI+LPV/r) among low-income countries or countries with low human development (35). Prices were generally higher for lower-middle and upper-middle income countries, ranging from US\$648 (AZT+ddI+LPV/r) to US\$770 (ABC+ddI+LPV/r) depending on transaction volume and use of originator or generic products.

Newer drugs for third-line regimens based on a combination of raltegravir, etravirine and darunavir were used in the Region in 2013. Volumes were generally small (<3%) in countries which provided third-line therapy. Although overall prices have decreased for low-income countries, the regimen still costs more than US\$1500 per person per year (34). Middle-income countries pay considerably higher prices. Morocco and Egypt, respectively, procured darunavir for US\$ 5356 and US\$ 5187, and etravirine for US\$ 3299 and US\$ 4823, per person per year in 2013. This means that countries spent a disproportionate amount on third-line drugs for small numbers of people, compared to first- and second-line ART. In 2013, Morocco, for example, provided third-line treatment for 20 people at US\$1700 per patient per month (about US\$20 400 per patient per year). This was equivalent to the first-line regimens of 1700 people at US\$ 240 per patient per year (36).

In essence, as countries plan to move towards higher volumes of TDF-based first-line regimens, prices are likely to reduce. This may be similar for the prices of second-line regimens as well. Cost-savings in this area are likely to make a considerable contribution to the rapid scale-up towards the regional goal of 15% more people receiving ART per year until 2015, particularly in countries with the greatest burden of treatment need.



Source: WHO country ART survey 2013.

Fig. 17. Cost of second-line ARV regimens per patient per year (US\$) in selected countries, 2012

### 4.3 Procurement and supply systems

Uninterrupted drug and commodity supplies are ongoing challenges in most countries. In the Region, there have been reports of shortages of ARV drugs, HIV test kits and blood sample tubes, among other health products. At times, there may not be overt interruption of drugs and commodities, but rather a relative shortage due to weak supply management. In Sudan, for example, stock-out of HIV testing kits are frequently reported although there may be overall adequate supplies. HIV test kits are earmarked for different HIV testing activities, sometimes leading to shortage in one activity and overstock in another or expiry. Inadequate management of drug stocks, such as differences between the quantity of drug supplies within the different registers, and lack of communication between the pharmacy and the ART clinic at facility level are other reasons<sup>30</sup>. Crisis situations and insecurity in several countries have resulted in disruption of supplies of drugs and commodities. In Libya, there was drug stock-out for several months during the 2011 revolution. Similarly, ongoing conflict in the Syrian Arab Republic has resulted in the interruption of drug supplies and patients in the country have been treated with various combinations of available drugs (see section 3.4.1).

### 4.4 Stigma/discrimination and its impact on HIV testing and ART scale-up

Stigma and discrimination have been cited consistently by every country as major deterrents for people seeking HIV testing as well as entry and retention in care and ART. Although there has been progress in the Region, with several countries instituting policies and strategies to address HIV-related human

<sup>30</sup> Ministry of Health, Provincial Government of Punjab, Pakistan, unpublished data, 2013.



rights and legal barriers, this area continues to be a significant challenge. Stigma Index documentation in Egypt, Somalia and Sudan revealed a variety of forms of stigma and discrimination. Examples include: substantial self-stigma in people living with HIV; exclusion from social activities including sleeping and eating; physical harassment and assault; beliefs that HIV infection is linked to “innocence” and “guilt”; lack of confidentiality and trust in health services; and being stigmatized and refused services by health care providers. One third of those surveyed reported that a health professional had disclosed their HIV status without consent, and a quarter had experienced their HIV status being disclosed to a spouse without consent, more commonly among women than men (6).

Concurrently, legal and environment factors create barriers for access to services, particularly among key populations. Laws prohibiting drug use, commercial sex and sex between men with their resulting impact such as police raids, harassment and mandatory detention, results in further marginalization of these individuals (6). This also puts their intimate partners at high risk and further reinforces stigma discrimination toward key populations. These issues, and the lack of comprehensive prevention programmes and inadequate coverage of key populations in many countries, are major obstacles in promoting HIV testing among at-risk individuals and getting people living with HIV enrolled and retained in care.

05

Syntheses



## 5. Syntheses

This is the first report on access to the HIV care continuum from diagnosis to care and treatment in the Eastern Mediterranean Region. The Region has, perhaps, one of the most geopolitically challenging landscapes for human development and health. Among the 22 countries, several are in post-conflict stages while others have varying degrees of political instability, conflict or civil strife. Mass population displacement within and across borders in several countries adds to the burden of health.

The emerging picture of access to the HIV care continuum from HIV diagnosis to receiving ART and retention in care, within the Eastern Mediterranean Region, can be summarized as follows:

1. **Burden of ART need.** Five countries bear the highest burden of people living with HIV, ranging from 30 500 to 70 000 people. These include the Islamic Republic of Iran, Morocco, Pakistan, Somalia and Sudan, which contain 89% of the estimated total number of people living with HIV in the Region. They also account for 87% of the estimated 140 000 people who require ART based on national HIV eligibility criteria in 2013.
2. **ART coverage.** There has been considerable and progressive improvement in access to ART with more people receiving treatment between 2011 and 2013. ART coverage varies widely among countries, with Djibouti and Morocco achieving 28% and 21%, respectively, while the unmet need for treatment remains high in others. The median regional ART coverage of 10% represents a treatment crisis.
3. **ART access to children.** Although information on treatment need among children living with HIV is inadequate, there has been some progress in access. Nearly all countries are providing ART to children. Only 3.3% of all people receiving treatment in the Region are children less than 14 years of age. Several countries have children younger than three years of age receiving ART, the age group most vulnerable to rapid HIV disease progression and death without ARV treatment. Nevertheless, the overall ART coverage in children remains low. Lack of early infant diagnosis and strong PMCT programmes integrated with essential maternal and child health services are key gaps in many countries.
4. **HIV testing and counselling.** Within the continuum of HIV care, this area requires major investment and is the one key weaknesses in getting people living with HIV into care at an early stage. Late diagnosis is a problem in all countries irrespective of economic development. While the numbers of people tested for HIV doubled between 2011 and 2012, access to and availability of testing services is limited within government health facilities in most countries. Coupled with inadequate programming for key populations, the lack of engagement of community-based organizations in care and a low coverage of prevention interventions, this means that most countries with low-level and/or concentrated epidemics need to diversify their approaches to HTC with community-based strategies. Simplifying the diagnostic process, use of HIV rapid testing and provision of same-day results will help expand uptake of testing. PITC requires strengthening, particularly within ANC, TB and STI services. Resources invested in mandatory testing services should be reviewed for reprogramming to achieve maximal impact through the identification of those people at higher risk who are more likely to be HIV positive, rather than focusing people who are mostly low risk and likely to be HIV negative. In countries with generalized HIV epidemics, normalization of HIV testing within health services should be the goal.

5. **Linkage to pre-ART and ART care.** Based on limited data from cascade analysis in Pakistan, Somalia and Sudan, approximately half to two-thirds of HIV positive individuals enrol in care after HIV diagnosis. The structural, patient and clinical barriers to linkages are similar across different settings. Factors known to improve the chance and success of connecting to care include adequate disclosure, family support, committed health care providers, peer and nongovernmental organization support, food and transport subsidies, and functional health facilities (timely ART initiation, CD4 count testing and a supportive environment for key populations). HIV stigma and discrimination, myths and misconceptions, and individual understandings of the value of ART, are all powerful incentives or disincentives for enrolment in treatment sites. Moreover, most countries have not defined the minimum package of services for people in pre-ART care, apart from co-trimoxazole prophylaxis. There is lack of robust referral and patient tracking mechanisms between HTC services and ART facilities, and for individuals who default or are lost to follow-up within pre-ART care.
6. **ART treatment.** All countries have established treatment programmes although many continue to have financial, technical and capacity issues such as weak infrastructure, lack of decentralization, non-functional laboratory equipment, lack of early infant diagnosis and viral load testing capacity, shortage of staff, drug and test kit stock-outs, lack of HIV integration with other services, vertical HIV programming, and dependency on external funding sources. Most countries have plans to change national treatment policies in alignment with the 2013 WHO recommendations for earlier treatment, simplification of national ART regimens, harmonization of treatment among different population subsets, and use of less toxic ARVs as first-line options. Of note, nine out of 12 countries surveyed planned to provide ART for people living with HIV within serodiscordant relationships, irrespective of CD4 counts. This will contribute to reducing HIV transmission within intimate partnerships and perhaps in the overall community.
7. **Quality of ART care including retention and drug stock-out.** Overt interruption of ARV drug supplies is not commonly reported in the Region. However, stock-out of one or several drugs at treatment facilities has occurred in several countries, necessitating interim measures to maintain patients on treatment. This has impacted ART adherence as patients experience frequent changes of their treatment regimens or have to return frequently for drug refills. Weak procurement and supply management contribute to the fragility of health services in several countries, and loss from the treatment cascade, as well as increasing the risk of the emergence of HIV drug resistance. Retention in ART care at 12 months of treatment among 17 countries is comparable or higher than the global average of approximately 80%. However, there is continued and gradual loss from ART care mirroring global experiences, with wide differences among countries. Moreover, high retention in ART care does not necessarily translate into successful viral suppression among people receiving treatment. Limited data on viral load testing among people receiving ART for 12 months in Tunisia shows suboptimal rates of viral suppression, possibly influenced by drug stock-outs in the programme.

In conclusion, the Region has made incremental progress over the past few years in the expansion of ARV treatment. The planned changes in national policies in line with the 2013 WHO recommendations will support expansion of access to HIV testing and ART. However, there are still considerable challenges to overcome towards the mid-term objective of 50% ART coverage by 2015 and universal access by 2020.

06

The way forward: the  
regional initiative to  
end the HIV  
treatment crisis



## 6. The way forward: the regional initiative to end the HIV treatment crisis

### 6.1 Conclusion

The WHO *Regional strategy for health sector response to HIV (2011–2015)* (37) and *Towards the elimination of mother-to-child transmission of HIV: conceptual framework for the Middle East and North Africa region* (27) provide the strategic directions and approaches for a scaled-up HIV prevention, treatment and care response. In 2013, WHO launched a regional initiative to end the HIV treatment crisis in the Region, which aims to achieve universal coverage with ARV therapy by 2020. Its immediate objective is to mobilize action to accelerate treatment access. In support of this initiative, WHO and UNAIDS developed a joint advocacy document that recommends the key strategies and actions required for the accelerated scaling-up of diagnosis and treatment (5). Ministers of health at the Sixtieth session of the WHO Regional Committee for the Eastern Mediterranean passed a resolution (EM/RC60/R.1) urging Member States to set ambitious annual HIV testing and treatment targets and to take urgent action to accelerate treatment access (38).

Given the complexities that influence health and HIV programmes in the Region, it will be essential for countries to adopt the approaches that best meet their needs according to epidemiological and other contexts. Central to achieving this will be political commitment by leaders for collective action on HIV. Opportunities exist for mobilizing support through the Arab AIDS strategy and regional networks of civil society organizations (6). A key question is how best to maximize the impact of ARV treatment for both its direct health impact and for its prevention benefit in reducing new infections. As HIV testing and treatment programmes are now established in all countries, there is an opportunity to strengthen and build on this experience for their scale-up.

The actions outlined below do not replicate the strategic directions and approaches outlined within the regional strategy and conceptual framework. Rather the focus is on selected key considerations that will enable countries to operationalize the regional initiative to end the HIV treatment crisis, and adopt a pragmatic approach towards programming.

### 6.2 Actions to operationalize the regional initiative to end the HIV treatment crisis

1. Improve strategic information on HIV testing and the treatment cascade using the WHO regional guide and tools developed for this purpose (39). The guide and tools support countries in establishing their performance, provide contextual information, and identify bottlenecks and opportunities for improving access to HIV treatment. In addition, the cascade exercise will help in mobilizing the involvement of stakeholders.
2. Set ambitious targets on increasing access to HIV treatment and care and treatment coverage.
3. Evaluate and scale-up successful pilot programmes. Many countries have established innovative



initiatives, although these remain small scale. These initiatives should be evaluated, refined where appropriate and scaled-up.

4. Review HIV testing policies and clarify national guidance for testing and counselling. In particular, provider-initiated testing and counselling within antenatal care, tuberculosis and sexually transmitted infection services should be strengthened. In countries with low-level and concentrated epidemics, and where resources are limited, considerations should include maximizing approaches that identify individuals at higher risk of HIV exposure and reach them in the early stages of HIV infection. This implies investment in prevention programmes and enhancing the capacity of community-based organizations for service delivery and linking key populations into HIV testing and care services (including harm reduction, ART for those who are living with HIV and other prevention interventions).
5. Adopt the 2013 WHO consolidated guidelines (3), which will expand the criteria for initiation of ART. Key considerations will be: price negotiations for procurement of the preferred TDF-based adult first-line regimens, particularly for countries considered least developed and/or who have significant burden of ART need; accelerated training of health care providers and other treatment supporters; and decentralization of ART care. Strategies include task-shifting of specific activities to nurses or peer educators, involvement of maternal health care providers in ART provision for pregnant women, provision of 3–4 months' supply of drugs for stable patients, decentralization of patients to other lower-level facilities and having peer networks support retention in care.
6. Adopt newer point-of-care diagnostics for HIV, CD4 count and viral load testing, which may help to surmount testing barriers, particularly among key populations. Laboratory capacity for HIV services, in particular early infant diagnosis, virological monitoring and HIV drug resistance testing, will continue to be a challenge in several countries. To increase access to diagnostics, countries without these capacities should consider networking with selected regional reference laboratories for these tests. This approach supports an increase in "south-south" collaboration, networking and provision of technical assistance within the Region.
7. Implement the WHO regional HIV basic knowledge course for stigma reduction in health care settings.

## 6.3 Actions to support Member States

The regional initiative to end the HIV treatment crisis will require technical support from a variety of partners, internal and external to the Region and will support Member States in their actions to operationalize the initiative in the following areas:

- advocacy for political commitment and consensus;
- accelerating strategic information, monitoring and evaluation, and research;
- strengthening partnerships and regional networking; and
- resource mobilization for sustainability.

07

Annexes



## Annex 1. Summary of selected demographic and HIV epidemic indicators, by country, 2013

Countries	Total population <sup>a</sup> (n)	UNDP HDI category <sup>b</sup>	Gross national income per capita (Atlas) economic ranking 2014 <sup>c</sup>	Adult HIV prevalence 15-49 years <sup>d</sup> (%)	New HIV infections <sup>d</sup> (n)	Annual AIDS death <sup>d</sup> (n)
Afghanistan	30 551 674	Low	Low	<0.1 (0.01–0.11) <sup>e</sup>	605 (178–2630)	292 (107–1090)
Bahrain	1 332 171	Very high	High	–	–	–
Djibouti	872 932	Low	Lower-middle	0.91 (0.71– 1.17)	111 (53– 226)	662 (484–882)
Egypt	82 056 378	Medium	Lower-middle	0.02 (0.01–0.03)	1 098 (586–2079)	407 (244–745)
Iran (Islamic Republic of)	77 447 168	High	Upper-middle	0.14 (<0.1–0.24)	7 828 (3842–21 557)	4 391 (3048–6206)
Iraq	33 417 476	Medium	Upper-middle	–	–	–
Jordan	6 459 000	High	Upper-middle	–	–	–
Kuwait	3 368 572	Very high	High	–	–	–
Lebanon	4 467 390	High	Upper-middle	0.1 (0.1–0.2) <sup>e</sup>	<500 (<200–<1000) <sup>e</sup>	<200 (<200–<500) <sup>e</sup>
Libya	6 201 521	High	Upper-middle	–	–	–
Morocco	33 008 150	Medium	Lower-middle	0.16 (0.11– 0.21)	3008 (1774–4604)	1444 (897–2167)
Oman	3 632 444	High	High	–	–	–
Pakistan	182 142 594	Low	Lower-middle	0.07 (0.04– 0.12)	14 457 (7045–33 337)	2 174 (1264–4019)
Occupied Palestinian territories	4 169 506	Medium	Lower-middle	–	–	–
Qatar	2 168 673	Very high	High	–	–	–
Saudi Arabia	28 828 870	Very high	High	–	–	–
Somalia	10 495 583	–	Low	0.53 (0.33– 0.84)	3 324 (1634–6457)	2 526 (1625–3775)
Sudan	37 964 306	Low	Lower-middle	0.24 (0.16– 0.34)	5204 (2109– 9726)	3101 (2538– 3787)
Syrian Arab Republic	22 845 550	Medium	Lower-middle	–	–	–
Tunisia	10 886 500	High	Upper-middle	0.05 (0.03–0.08)	546 (266–942)	130 (65–227)
United Arab Emirates	9 346 129	Very high	High	–	–	–
Yemen	24 407 381	Low	Lower-middle	0.04 (0.02– 0.11)	617 (178–1747)	446 (206–1319)

Sources:

<sup>a</sup> World Bank. Total population size in 2013 (<http://data.worldbank.org/indicator/SP.POP.TOTL>, accessed 5 September 2014).

<sup>b</sup> UNDP. Human Development Index (HDI) report 2014 (<http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf>, accessed 5 September 2014). Note: countries are ranked as: very high, high, medium and low on the human development index.

<sup>c</sup> World Bank economic ranking by income group. Economies are divided according to 2013 GNI per capita, calculated using the World Bank Atlas method. The groups are: low income, US\$1045 or less; lower middle income, US\$1046–US\$4125; upper middle income, US\$4125–US\$12746; and high income, US\$12746 or more (<http://data.worldbank.org/about/country-and-lending-groups>, accessed 5 September 2014).

<sup>d</sup> UNAIDS Spectrum estimates for 2013.

<sup>e</sup> Data for 2012.

– Data not available

## Annex 2. Estimated number of people living with HIV (PLHIV) needing ART and coverage, by country, 2013

Countries	Estimated total PLHIV (all ages) <sup>a</sup> (numbers)	Estimated PLHIV requiring ART or PMTCT in 2013 <sup>a</sup> (numbers)			Estimated coverage based on national eligibility criteria in 2013 <sup>a, b</sup> (%)			
		Adults (15+ years) needing ART	Children (0–14 years) needing ART	Pregnant women needing PMTCT	Adult (15+ years) ART coverage	ART coverage in children (0–14 years)	Total ART coverage	PMTCT coverage
Afghanistan	4458 (1686–16 702)	4948 (total, 2012) <sup>c</sup>	–	–	–	–	4.2 <sup>d</sup>	–
Bahrain	–	–	–	–	–	–	–	–
Djibouti	6159 (4841–7807)	4200 (3400–5300)	<1000 (<500–<1000)	<500 (<200–<500)	34 (26–43)	4 (3–5)	28 (22–36)	36 (26–52)
Egypt	7439 (4824–12 274)	3300 (2300–5200)	<200 (<200–<500)	<200 (<100–<500)	16 (9–24)	22 (12–2)	16 (10–24)	15 (9–22)
Iran (Islamic Republic of)	70 352 (47 445–114 461)	24 000 (18 000–32 000)	1300 (<1000–2000)	<1000 (<1000–1600)	6 (4–9)	8 (6–12)	6 (4–9)	14 (8–23)
Iraq	–	–	–	–	–	–	–	–
Jordan	–	–	–	–	–	–	–	–
Kuwait	–	–	–	–	–	–	–	–
Lebanon	3200 (2100–5000) <sup>e</sup>	–	–	–	–	–	–	–
Libya	–	–	–	–	–	–	–	–
Morocco	30 556 (21 966–41 615)	13 000 (10 000–17 000)	<1000 (<500–<1000)	<500 (<500–<1000)	20 (15–28)	53 (38–79)	21 (16–29)	39 (29–55)
Oman	–	–	–	–	–	–	–	–
Pakistan	68 046 (41 135–127 887)	48 778 <sup>c</sup>	1437 <sup>c</sup>	–	5.3 <sup>c</sup>	3.7 <sup>c</sup>	–	8.1 <sup>c</sup>
Occupied Palestinian territories	–	–	–	–	–	–	–	–
Qatar	–	–	–	–	–	–	–	–
Saudi Arabia	–	–	–	–	–	–	–	–

## Annex 2. Estimated number of people living with HIV (PLHIV) needing ART and coverage, by country, 2013 (concluded)

Countries	Estimated total PLHIV (all ages) <sup>a</sup> (numbers)	Estimated PLHIV requiring ART or PMTCT in 2013 <sup>a</sup> (numbers)			Estimated coverage based on national eligibility criteria in 2013 <sup>a, b</sup> (%)			
		Adults (15+ years) needing ART	Children (0–14 years) needing ART	Pregnant women needing PMTCT	Adult (15+ years) ART coverage	ART coverage in children (0–14 years)	Total ART coverage	PMTCT coverage
Somalia	32 313 (20 730–50 743)	9800 (6700–15 000)	3100 (2000–4800)	1800 (1100–2900)	4 (3–7)	6 (4–9)	5 (3–7)	3 (2–5)
Sudan	49 287 (33 774–69 831)	18 000 (14 000–23 000)	3300 (2700–4200)	2500 (1600–3500)	7 (5–10)	5 (4–7)	7 (5–10)	3 (2–5)
Syrian Arab Republic	–	–	–	–	–	–	–	–
Tunisia	3431 (2075–5392)	2300 (1500–3500)	–	–	16 (10–26)	–	16 (10–26)	–
United Arab Emirates	–	–	–	–	–	–	–	–
Yemen	5962 (3257–15 274)	2900 (1700–6800)	<500 (<200–<1000)	<200 (<100–<500)	15 (6–27)	17 (5–35)	15 (6–28)	11 (8–17)

Sources:

<sup>a</sup> UNAIDS Spectrum estimates for 2013.

<sup>b</sup> ART coverage as defined by the 2014 GARPR guidelines.

<sup>c</sup> Data from UNGASS country narrative report 2014.

<sup>d</sup> Reported total ART coverage of eligible adults and children based on programme data for 2013.

<sup>e</sup> 2012 data.

– Data not available

## Annex 3. Country fact sheets

### List of abbreviations

AIDS: acquired immune deficiency syndrome

ANC: antenatal care

ART: antiretroviral therapy

ARV: antiretroviral

GNI: gross national income

HCV: hepatitis C virus

HDI: human development index

HIV: human immunodeficiency virus

HTC: HIV testing and counselling

MSM: men who have sex with men

PLHIV: people living with HIV/AIDS

PMTCT: prevention of mother-to-child transmission of HIV

PWID: people who inject drugs

STI: sexually transmitted infection

SW: sex worker

TB: tuberculosis

### Sources for fact sheets

Global AIDS response country progress reports 2010–2014; UNAIDS Spectrum estimates and projections; UNDP Human Development Index report; UNGASS country narrative reports 2010, 2012 and 2014; WHO Eastern Mediterranean Region country surveys 2012 and 2013; WHO/AIDS Medicines and Diagnostics Service (AMDS) ARV surveys 2014; HIV Surveillance in the WHO Eastern Mediterranean Region: regional update 2012; World Bank total population statistics and GNI per capita (Atlas method) 2013. Data reported are for the year 2013, unless in parentheses. ART coverage estimates follow the Global AIDS response 2014 reporting guidelines for which the denominator is the estimated total number of people living with HIV.





# Afghanistan

## General information

**Population:** 30 551 674

**HDI rank:** 169 (low)

**GNI (per capita, Atlas):** US\$ 700 (low income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.03 [0.01–0.11]
HIV prevalence in PWID (%)	4.4 (2012)
HIV prevalence in MSM (%)	0.48
HIV prevalence in SW (%)	0.3 (2012)
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0.55 (2012)
HIV prevalence in STI patients (%)	0 (2011)
HIV prevalence in blood donors (%)	0.02 (2012)
Estimated numbers of PLHIV (all ages)	4458 [1686–16 702]
Estimated numbers of new infections	605 [178–2630]
Estimated AIDS-related deaths	292 [107–1090]

The HIV epidemic is concentrated mainly among PWID, with low prevalence in the general population.

## HIV testing and treatment access

Number of HTC facilities	11 (2009)
Number of ART facilities	2
Numbers of adults and children receiving ART	211
Numbers of children receiving ART	16
ART coverage in adults (%)	5 [1–12]
ART coverage in children (%)	7 [2–16]

## Numbers of people tested and percentage found to be HIV positive

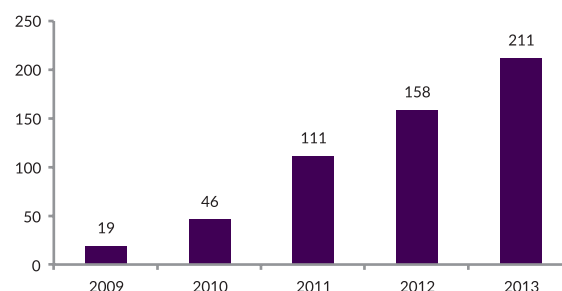
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2012)	547	39 (7.1)
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees	Not available	Not available
TB patients (2012)	7275	5 (0.07)
STI patients (2011)	192	0 (0)
Others: Prisoners (2011)	1208	– (0.2)

Current testing policies recommend risk-based assessment of pregnant women, TB and STI patients, with further referral to voluntary HTC services.

## ART coverage

Estimated ART coverage for 2013 was 5% of all PLHIV.

The coverage in children was 7%.



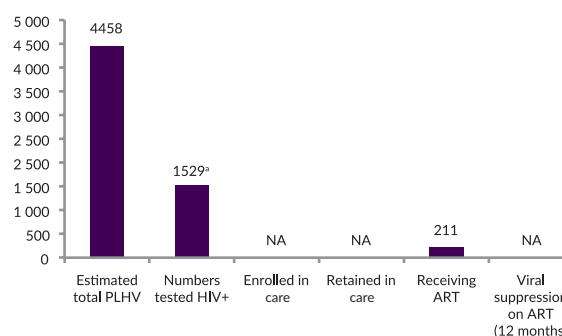
PLHIV receiving ART, 2009-2013

Access to treatment remains limited to the two clinics established in Kabul and Herat since 2009. Both first- and second-line ART regimens are available. PMTCT coverage is 7.5% according to routine data sources in 2013.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	– (96.2)
% retention in care at 24 months	– (95.0)
% of patients who had viral load suppression after 12 months of ART	Not available

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported at the end of 2012.  
NA: not available.

# Bahrain

## General information

**Population:** 1 332 171

**HDI rank:** 44 (very high)

**GNI (per capita, Atlas):** US\$ 19 560<sup>1</sup> (high income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	< 0.1
HIV prevalence in new TB cases (%)	4.5 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	< 0.1
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

Case-finding is done primarily through mandatory screening. Annually, approximately 15–20 new HIV infections in Bahrainis are identified.

## HIV testing and treatment access

Number of HTC facilities	Not available
Number of ART facilities	1
Numbers of adults and children receiving ART	63
Numbers of children receiving ART	1
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

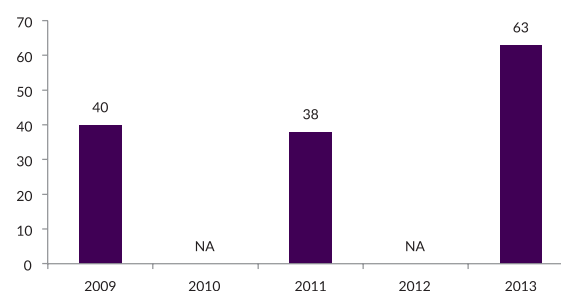
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2010–2011)	332	11 (3.3)
MSM	Not available	Not available
SW (2010–2011)	724	6 (0.8)
ANC attendees (2012–2013)	4003	0 (0)
TB patients (2011)	184	1 (0.5)
STI patients (2010)	192	– (0.5)
Others: Pre-marital screening (2012–2013)	22 419	4 (0.002)
Others: Blood donors (2012–2013)	34 007	1 (< 0.01)

HIV testing is performed either through provider-initiated testing at health centres or as part of mandatory screening.

<sup>1</sup> ± Reported data of 2012.

## ART coverage

ART coverage is not available in adults and children.



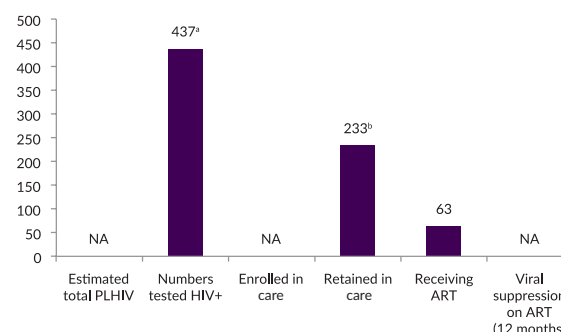
PLHIV receiving ART, 2009–2013

There are no official estimates of the numbers of PLHIV in need of treatment. ART treatment is centralized at a tertiary-level hospital in Manama. CD4 cell count testing, virological monitoring and HIV resistance testing is available for all patients.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% of patients retained in care at 12 months	Not available
% of patients who had viral load suppression after 12 months of ART	Not available

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases (Bahraini nationals) reported since 1986 till the end of 2013.

<sup>b</sup> Proxy of retained in care as "known Bahraini nationals currently alive" at the end of 2013.

NA: not available.

# Djibouti

## General information

**Population:** 872 932

**HDI rank:** 170 (low)

**GNI (per capita, Atlas):** Not available (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.91 [0.71–1.17]
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	15.4 (2010)
HIV prevalence in ANC attendees (%)	0.8 (2011)
HIV prevalence in new TB cases (%)	10 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.8 (2012)
Estimated numbers of PLHIV (all ages)	6159 [4841–7807]
Estimated numbers of new infections	111 [53–226]
Estimated AIDS-related deaths	662 [484–882]

The first AIDS case was reported in 1986. In 2013, the HIV prevalence in adults was 0.9%, consistent with a generalized epidemic which has been stabilizing since 2003. Primarily driven through heterosexual transmission (83.5%), infections in women outnumber men by a ratio of 1.2 (5378 women to 4173 men).

## HIV testing and treatment access

Number of HTC facilities	28 (2012)
Number of ART facilities	27 (2012)
Numbers of adults and children receiving ART	1729
Numbers of children receiving ART	46
ART coverage in adults (%)	34 [26–43]
ART coverage in children (%)	4 [3–5]

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW (2010)	52	8 (15.4)
ANC attendees (2013)	4729	82 (1.7)
TB patients (2013)	1773	140 (7.9)
STI patients	Not available	Not available
Others: Blood donors (2012)	786	– (0.8)

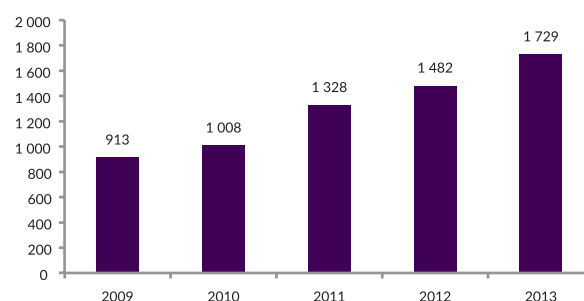
Voluntary HTC services at 28 facilities (26 public and 2 private) provided an average of 6500 tests per annum during 2008–2010; with about 10% testing positive. In 2013, out of 12 441 pregnant women attending ANC, 38% (n = 4729) had HIV testing. Confidential voluntary HTC for SW is being specifically offered at one centre in Djibouti City. Testing data in female SW

show consistently high HIV prevalence of 20.3% in 2008 (16 of 79 persons tested) and 15.4% (8 of 52) in 2010.

## ART coverage

ART coverage in adult = 34 %.

ART coverage in children = 4 %.



PLHIV receiving ART, 2009–2013

A total of 27 ART facilities including five in districts provide access to treatment to about 70% of the country. In 2013, about 4200 [3400–5300] adults and less than 1000 children were estimated to be eligible for ART based on national eligibility criteria. Treatment coverage in adults has increased slightly from 30.8% to 34% between 2011 and 2013. Access to treatment for children remains low. The majority of people on treatment are receiving first-line regimens.

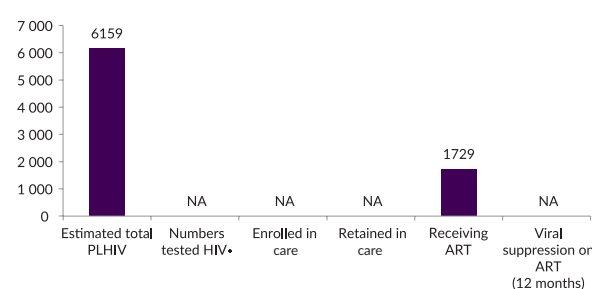
Option B+ has been provided to all HIV positive pregnant women since 2013. An estimated 255 HIV positive pregnant women are in need of PMTCT interventions; however, routine programme data indicate only 82 have been identified in 2013. The estimated PMTCT coverage in 2013 was 36% [26%–52%].

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2012)	5/27 (18.5)
% retention in care at 12 months	186/231 (80.5 in 2013)
% retention in care at 24 months (2012)	86/118 (72.9)
% retention in care at 60 months (2012)	136/459 (29.6)
% of patients who had viral load suppression after 12 months of ART	Not available

Viral load testing is being scaled-up. One-third (n = 451) of those receiving ART had at least one viral load test in 2012.

## The treatment cascade



NA: not available.

# Egypt

## General information

**Population:** 82 056 378

**HDI rank:** 110 (medium)

**GNI (per capita, Atlas):** US\$ 3160 (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.02 [0.01–0.03]
HIV prevalence in PWID (%)	6.7 (2010)
HIV prevalence in MSM (%)	2.2
HIV prevalence in SW (%)	0 (2010)
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0.99 (2012)
HIV prevalence in STI patients (%)	< 0.001 (2009)
HIV prevalence in blood donors (%)	0.005 (2010)
Estimated numbers of PLHIV (all ages)	7439 [4824–12 274]
Estimated numbers of new infections	1 098 [586–2079]
Estimated AIDS-related deaths	407 [244–745]
Others: Prisoners (%)	< 0.001 (2009)
Others: Street children in Cairo (%)	0.5 (2010)

Egypt has a low HIV prevalence among the general population (0.02% in 2013) with a concentrated epidemic among MSM and PWID.

## HIV testing and treatment access

Number of HIV testing and counselling facilities	62
Number of ART facilities	6 (2011)
Numbers of adults and children receiving ART	1171
Numbers of children receiving ART	53
ART coverage in adults (%)	16 [9–24]
ART coverage in children (%)	22 [12–32]

## Numbers of people tested and percentage found to be HIV positive

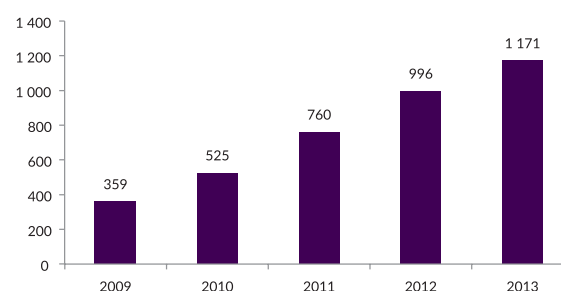
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	863	13 (1.5)
MSM	625	14 (2.2)
SW	188	1 (0.5)
ANC attendees	Not available	Not available
TB patients (2012)	1 514	17 (1.1)
STI patients (2008)	523	0 (0)
Others: Prisoners (2008)	923	2 (0.2)

Voluntary HCT is available through static and mobile services at public and nongovernmental facilities. In 2011, 6489 people received HTC, of which 22.6% were key members of populations.

## ART coverage

ART coverage in adults = 16%.

ART coverage in children = 22%.

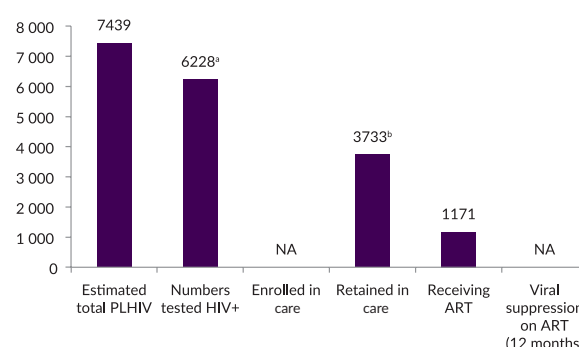


PLHIV receiving ART, 2009-2013

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	73.1 (490/670)
% of patients who had viral load suppression after 12 months of ART	Not available

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS case (all) reported at the end of 2013, of whom 5108 (82%) are Egyptian nationals.

<sup>b</sup> Proxy of retained in care as "known Egyptian nationals currently alive" at the end of 2013.

NA: not available.

# Islamic Republic of Iran

## General information

**Population:** 77 447 168

**HDI rank:** 75 (high)

**GNI (per capita, Atlas):** US\$ 5780 (upper-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.14 [< 0.1– 0.24]
HIV prevalence in PWID (%)	15.1 (2012)
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	4.5 (2011)
HIV prevalence in ANC attendees (%)	0.1 (2011)
HIV prevalence in new TB cases (%)	1.9 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.004 (2011)
Estimated numbers of PLHIV (all ages)	70 352 [47 445–114 461]
Estimated numbers of new infections	7828 [3842–21 557]
Estimated AIDS-related deaths	4391 [3048–6206]

HIV transmission is driven primarily by injecting drug use, with 68% of new infections occurring in PWID and their partners, followed by sexual transmission (34% opposite-sex and 10% same-sex contact).

## HIV testing and treatment access

Number of HTC facilities	446
Number of ART facilities	229
Numbers of adults and children receiving ART	4472
Numbers of children receiving ART	172
ART coverage in adults (%)	6 [4–9]
ART coverage in children (%)	8 [6–12]

## Numbers of people tested and percentage found to be HIV positive

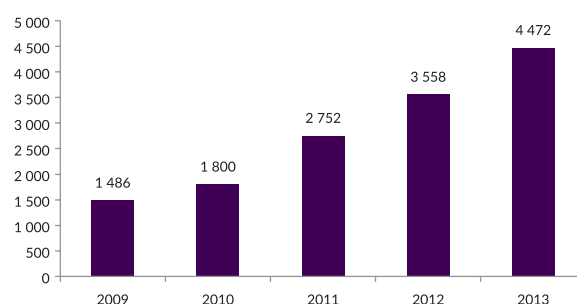
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2011)	2479	338 (13.6)
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2011)	2758	1 (0.04)
TB patients (2012)	1574	283 (18.0)
STI patients	Not available	Not available
Others: Voluntary HTC clients (2013)	66 788	1539 (2.3)
Others: Prisoners (2011)	17 728	– (2.9)

Voluntary HTC services have expanded from 231 centres in 2006 to 446 in 2013. National policy recommends PITC and evaluation of HIV risks in pregnant women and TB patients.

## ART coverage

ART coverage in adult = 6 %.

ART coverage in children = 8 %.



PLHIV receiving ART, 2009-2013

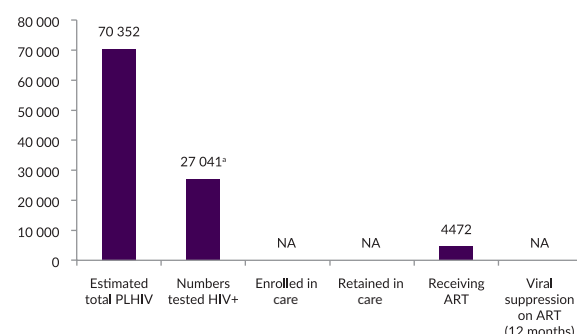
In 2013, an estimated 24 000 [18 000–32 000] adults and 1300 [< 1000–2000] children were in need of ART. Treatment coverage was 6% in adults and 8% among children. Option B+ lifelong triple ARV combinations were provided to 56 HIV positive pregnant women in 2013. The estimated PMTCT coverage in 2013 was 14% [8%–23%].

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	1045/1229 (85.0)
% retention in care at 24 months	644/835 (77.0)
% retention in care at 60 months	129/219 (58.9)
% of patients who had viral load suppression after 12 months of ART	Not available

No drug stock-outs were reported in 2012. HIV drug resistance monitoring using early warning indicators in 2012 showed that approximately 60% of patients collected their prescribed ART on time. CD4 count testing is routinely conducted, while viral load testing is limited. HIV drug resistance genotyping capacities are established.

## The treatment cascade



\* Cumulative HIV/AIDS case reported at the end of 21 September 2013. NA: not available.

# Iraq

## General information

**Population:** 33 417 476

**HDI rank:** 120 (medium)

**GNI (per capita, Atlas):** US\$ 6710 (upper-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.0002 (2011)
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

Iraq is categorized as a low HIV prevalence country. The first HIV case was reported in 1986 among haemophiliac patients. Between 1986 and 2011, 615 HIV cases were officially reported, of whom 309 (50%) were Iraqi citizens and 59 (19%) were alive at the end of 2011.

## HIV testing and treatment access

Number of HTC facilities	More than 100 sites
Number of ART facilities	Not available
Numbers of adults and children receiving ART	17
Numbers of children receiving ART	0
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees	Not available	Not available
TB patients (2012)	10 419	30 (0.3)
STI patients (2010)	7821	2 (0.03)
Others: Premarital screening (2011)	565 854	2 (0.0002)
Others: Blood donors (2011)	523 172	1 (0.0002)
Others: HTC clients (2011)	3819	2 (0.05)

Others: Foreigners (workers and visitors) (2012)

112 443

10 (0.009)

Others: Prisoners (2010)

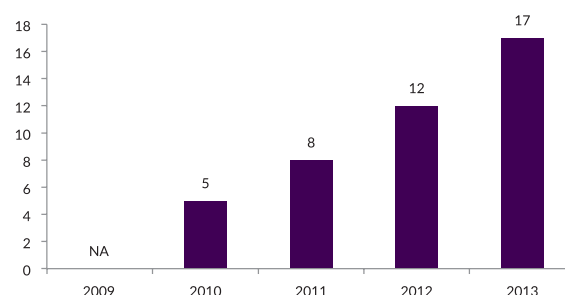
4629

0 (0)

Voluntary HTC services were introduced in 2004, although the majority of HIV testing occurs as part of mandatory screening. In 2011, a total of 1 306 651 HIV tests were performed in both mandatory and voluntary settings. Of these, 20 (0.002%) were HIV positive.

## ART coverage

ART coverage in adults and children is not available.

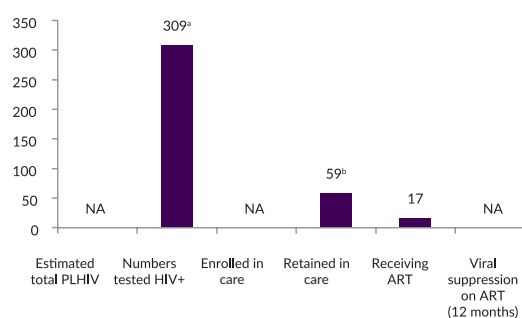


PLHIV receiving ART, 2009-2013

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	Not available
% of patients who had viral load suppression after 12 months of ART	Not available

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported (Iraqi nationals) at the end of 2011.

<sup>b</sup> Proxy of retained in care as "known Iraqi nationals currently alive" at the end of 2011.

NA: not available.

# Jordan

## General information

**Population:** 6 459 000

**HDI rank:** 77 (high)

**GNI (per capita, Atlas):** US\$ 4950 (upper-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	0 (2009)
HIV prevalence in MSM (%)	0.2
HIV prevalence in SW (%)	0.45
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.0005 (2011)
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

Jordan has a low HIV prevalence both among the general and key populations.

## HIV testing and treatment access

Number of HTC facilities	12 HTC and private medical sector (2012)
Number of ART facilities	1
Numbers of adults and children receiving ART	111
Numbers of children receiving ART	3
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

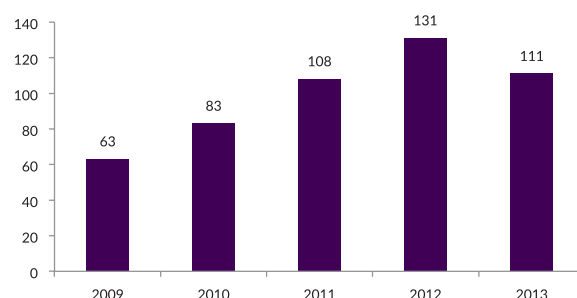
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID <sup>a</sup>	1051	0
MSM	656	1 (0.2)
SW	672	3 (0.45)
ANC attendees	Not available	Not available
TB patients (2012)	177	0
STI patients	Not available	Not available
Others: Prisoners (2010)	Not available	0
Others: Blood donors (2011)	189 621	1 (0.0005)

Client-initiated HIV testing is available through 12 voluntary HTC sites. Policies on mandatory testing also exist.

<sup>a</sup> Screening data of all people admitted to the Ministry of Health National Centre for Rehabilitation of Addicts and Public Security Department's Substance Abuse Treatment Centre in 2013.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

## Quality of treatment services

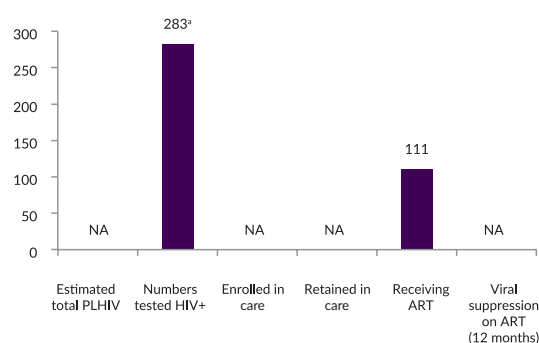
% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2012) 0

% retention in care at 12 months 16/16 (100)

% of patients who had viral load suppression after 12 months of ART (2011) 90.9

In 2011, a survey of acquired HIV drug resistance was carried out at one treatment site. Of 11 patients surveyed, 90.9% achieved viral suppression after 12 months of treatment.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported (Jordanian nationals) at the end of 2013.

NA: not available.



# Kuwait

## General information

**Population:** 3 368 572

**HDI rank:** 46 (very high)

**GNI (per capita, Atlas):** US\$ 44 940<sup>1</sup> (high)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0.9 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.006 (2011)
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

Kuwait has a low HIV prevalence. Data is scarce for key populations including PWID, MSM and female SWs.

## HIV testing and treatment access

Number of HTC facilities	2
Number of ART facilities	Not available
Numbers of adults and children receiving ART	241
Numbers of children receiving ART	3
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2013)	976	1 (0.1)
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees	Not available	Not available
TB patients (2012)	737	3 (0.4)
STI patients	Not available	Not available
Others: Blood donors (2011)	66 046	– (0.006)
Others: Premarital couple screening (2011)	26 467	– (0.003)
Others: Prisoners (2011)	3567	-- (0.1%)

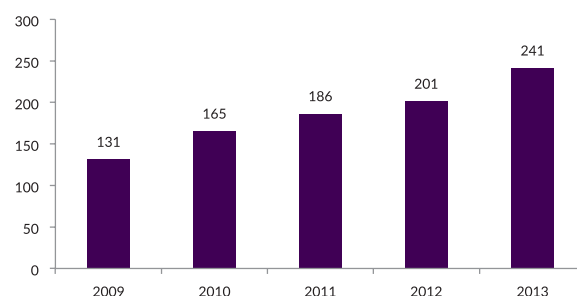
<sup>1</sup> Reported data from 2011.

Most HIV testing is conducted in the context of mandatory screening such as for pre-marital and pre-employment testing, blood transfusions and major invasive operations, and testing of expatriates in the context of residency and work permits.

Voluntary HTC services have not been established. Voluntary testing is offered to STI patients, while TB patients are routinely tested for HIV. HIV testing is not routinely offered to pregnant women.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

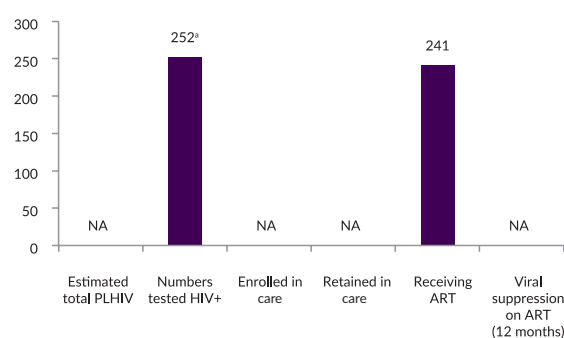
An estimate of the need for ART is not available. Universal access to free treatment is provided to all Kuwaiti nationals.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2010)	0
% retention in care at 12 months	91.7 (11/12)
% of patients who had viral load suppression after 12 months of ART (2010)	92.0

Kuwait has adopted an individual-approach to treatment in which patients are provided CD4 count, viral load and HIV drug resistance genotype testing before initiation of ART. The treatment regimen is then defined accordingly.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported (Kuwaiti nationals) at the end of 2013.  
NA: not available.

# Libya

## General information

**Population:** 6 201 521

**HDI rank:** 55 (high)

**GNI (per capita, Atlas):** USD\$ 12 930<sup>1</sup> (upper-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.1 (2005)
HIV prevalence in PWID (%)	87 (2012)
HIV prevalence in MSM (%)	3.1 (2012)
HIV prevalence in SW (%)	16 (2012)
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	8.5 (2011)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.3 (2011) <sup>2</sup>
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

There is little data available on the HIV epidemic. The last population prevalence survey in 2004–2005 among 65 000 persons, found a low HIV prevalence of 0.13% (90 cases). However, higher HIV prevalence has been noted in the south in Al Kufrah (0.67%) and in Tripoli (0.4%). Among 6371 male prisoners tested in five prisons in the western region of Libya during 2006, 18.2% were HIV infected.<sup>3</sup>

## HIV testing and treatment access

Number of HTC facilities	Not available
Number of ART facilities	5
Numbers of adults and children receiving ART	2662
Numbers of children receiving ART	Not available
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees	Not available	Not available
TB patients (2011)	731	128 (17.7)
STI patients	Not available	Not available

<sup>1</sup> Reported data from 2009.

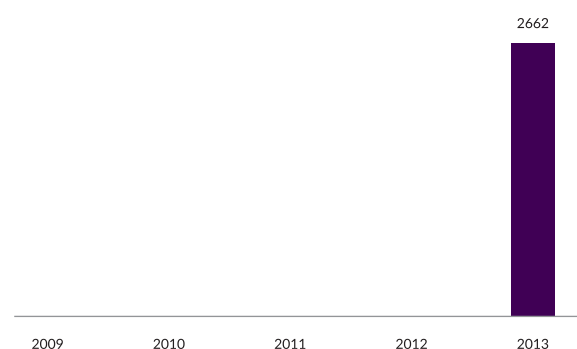
<sup>2</sup> Tripoli Central Blood Bank only.

<sup>3</sup> Ziglam H, Zorgani A, Balouz A, Abudher AH, Elahmer O. Prevalence of antibodies to human immunodeficiency virus, hepatitis B and hepatitis C in prisoners in Libya. Libyan J Med. 2012;7:19713. doi: 10.3402/ljm.7710.19713.

Voluntary HTC services have not yet been established, and are only available at the national reference laboratory in Tripoli. Current testing policies recommend routine HIV testing for pregnant women, and STI and TB patients. Data, however, is not available on the various subgroups, except for TB patients. In 2010 and 2011, HIV prevalence among new TB cases was 23.9% (n = 189/792) and 17.5% (n = 128/731), respectively.

## ART coverage

ART coverage in adults and children is not available.



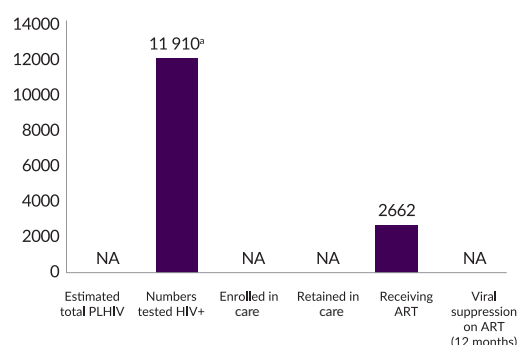
PLHIV receiving ART, 2009–2013

Free ART services are available for all Libyan citizens at five government hospitals in the country. Disruption of ART supplies due to the conflict has led to prolonged treatment interruption for patients who were taking ART. Sharing of ARV drugs and partial treatments using one or two drugs has been reported. During this period, admissions to hospitals of PLHIV with very advanced disease and high mortality increased.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	Not available
% of patients who had viral load suppression after 12 months of ART	Not available

## The treatment cascade



\* Cumulative HIV/AIDS cases reported at the end of 2011. NA: not available.

# Morocco

## General information

**Population:** 33 008 150

**HDI rank:** 129 (medium)

**GNI (per capita, Atlas):** US\$ 3030 (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.16 [0.11–0.21]
HIV prevalence in PWID (%)	11.4 (2011)
HIV prevalence in MSM (%)	5.1 (2010)
HIV prevalence in SW (%)	2.0 (2011)
HIV prevalence in ANC attendees (%)	0.1 (2011)
HIV prevalence in new TB cases (%)	1.8 (2012)
HIV prevalence in STI patients (%)	0.3 (2010)
HIV prevalence in blood donors (%)	0.02 (2011)
Estimated numbers of PLHIV (all ages)	30 556 [21 966–41 615]
Estimated numbers of new infections	3008 [1774–4604]
Estimated AIDS-related deaths	1444 [897–2167]

Morocco has a low overall HIV prevalence of 0.16%, with a growing concentrated epidemic among key populations. The epidemic is primarily driven through heterosexual transmission (74.1%) and male-to-male sex (21.2%).

## HIV testing and treatment access

Number of HTC facilities	545
Number of ART facilities	15
Numbers of adults and children receiving ART	6464
Numbers of children receiving ART	333
ART coverage in adults (%)	20 [15–28]
ART coverage in children (%)	53 [38–79]

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2011)	536	61 (11.4)
MSM (2011)	664	34 (5.1)
SW (2011)	1415	28 (2.0)
ANC attendees (2011)	2995	– (0.1)
TB patients (2011)	1856	– (2.2)
STI patients (2011)	201	– (1.99)
Others: Blood donors (2011)	200 000	– (0.02)
Others: Male prisoners (2010)	Not available	– (0.5)
Others: National testing campaign (pregnant women) (2012–2013)	84 053	60 (0.07)

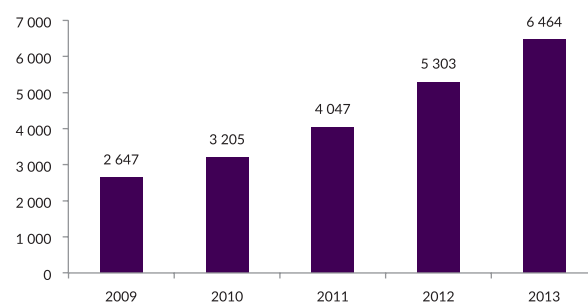
Others: National testing campaign excluding pregnant women (2012–2013) 495 814 985 (0.2)

HIV testing is available in 385 primary care facilities, 52 TB centres, 52 maternity services and at 56 static and mobile voluntary HTC sites.

## ART coverage

ART coverage in adult = 20%.

ART coverage in children = 53%.



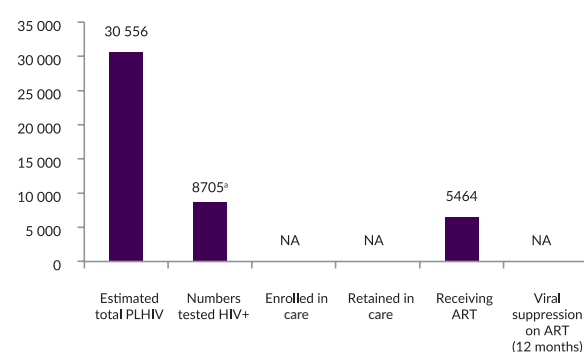
PLHIV receiving ART, 2009-2013

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	0 (0/15)
% retention in care at 12 months	90.8 (–)
% retention in care at 24 months (2012)	84.3 (436/517)
% retention in care at 60 months (2012)	82.4 (420/510)
% of patients who had viral load suppression after 12 months of ART	Not available

No reports of drug stock-outs occurred in 2011–2013

## The treatment cascade



\* Cumulative HIV/AIDS cases reported between 1986 till end of 2013. NA: not available.

# Oman

## General information

**Population:** 3 632 444

**HDI rank:** 56 (high)

**GNI (per capita, Atlas):** US\$ 25 250<sup>1 ±</sup> (high)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	1.1 (2012)
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	0.03 (2011)
HIV prevalence in new TB cases (%)	3.3 (2012)
HIV prevalence in STI patients (%)	0.02 (2011)
HIV prevalence in blood donors (%)	0.01 (2011)
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

Oman has a low HIV prevalence. A cumulative number of 2394 Omani cases were reported up to the end of 2013.

## HIV testing and treatment access

Number of HTC facilities	1042 (2011)
Number of ART facilities	15
Numbers of adults and children receiving ART	821
Numbers of children receiving ART	Not available
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

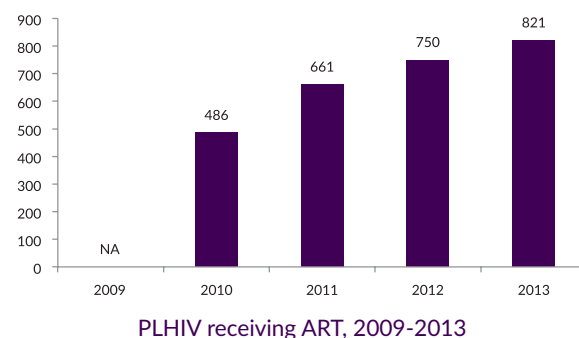
## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2011)	929	13 (1.4)
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2011)	72 253	24 (0.03)
TB patients (2011)	Not available	– (2.9)
STI patients (2011)	Not available	– (0.02)
Others: Prisoners (2011)	Not available	– (0.3)
Others: Blood donors (2011)	Not available	– (0.01)

A total of 1042 (226 public and 816 private) health facilities provide HTC services. The majority (77%) of HIV testing occurs as part of the mandatory screening of foreigners in the context of applications for residency permits.

## ART coverage

ART coverage in adults and children is not available.

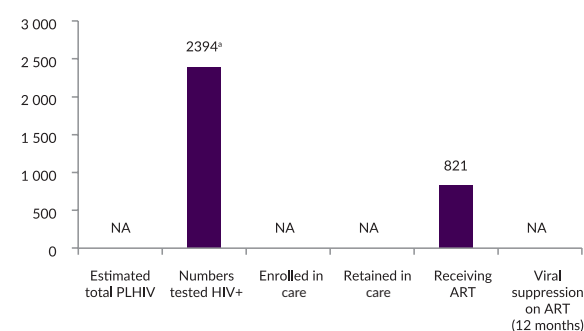


## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2012)	6.7 (1/15)
% retention in care at 12 months (2012)	74.3 (75/101)
% retention in care at 24 months (2012)	94.8 (55/58)
% retention in care at 60 months (2012)	100 (28/28)
% of patients who had viral load suppression after 12 months of ART (2011)	35

In 2012, one out of 15 ART sites reported ARV drug stock-outs. Retention in care data shows that three-quarters of patients starting ART were still retained at 12 months.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases (Omani nationals) reported at the end of 2013. NA: not available.

<sup>1</sup> World Bank data for end of 2012.

# Pakistan

## General information

**Population:** 182 142 594

**HDI rank:** 146 (low)

**GNI (per capita, Atlas):** US\$ 1380 (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.07 [0.04 – 0.12]
HIV prevalence in PWID (%)	27.2 (2011)
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	2.4 (2011)
HIV prevalence in ANC attendees (%)	0.04 (2011)
HIV prevalence in new TB cases (%)	0.9 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	Not available
Estimated numbers of PLHIV (all ages)	68 046 [41 135 – 127 887]
Estimated numbers of new infections	14 457 [7045 – 33 337]
Estimated AIDS-related deaths	2174 [1264 – 4019]

The first HIV case was identified in 1987. Pakistan has an overall HIV prevalence of <0.1%, and a growing concentrated epidemic among key populations. The epidemic varies significantly across urban centres and among provinces, with Punjab province containing approximately half of the total estimated PLHIV in the country.

## HIV testing and treatment access

Number of HTC facilities	17 (2012)
Number of ART facilities	18
Numbers of adults and children receiving ART	4391
Numbers of children receiving ART	70
ART coverage in adults (%)	5.3
ART coverage in children (%)	3.7

## Numbers of people tested and percentage found to be HIV positive

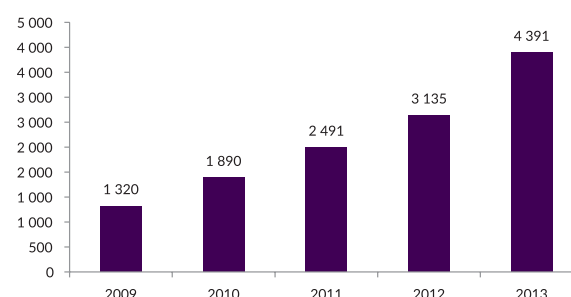
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2011)	4953	1348 (27.2)
MSM	Not available	Not available
SW (2011)	11 702	281 (2.4)
ANC attendees	Not available	Not available
TB patients	10 419	30 (0.3)
STI patients	Not available	Not available
Others: Spouses of PWID <sup>1</sup>	605	33 (5.4)
Others: HTC of PWID <sup>1</sup>	12 282	3286 (26.7)

<sup>1</sup> HTC conducted by the Nai Zindagi nongovernmental organization for spouses of male PWIDs (irrespective of HIV status) and PWID between 2012 and December 2013.

## ART coverage

ART coverage in adult = 5.3 %.

ART coverage in children = 3.7 %.



PLHIV receiving ART, 2009-2013

Since the establishment of ART services in 2005, 18 public and private ART clinics have provided universal free treatment to adults and children. At the end of 2013, 7568 people had registered with the programme and 4391 were receiving ART. Pakistan plans to increase the treatment eligibility threshold to a CD4 count of less than 500 cells/mm<sup>3</sup> in 2014.

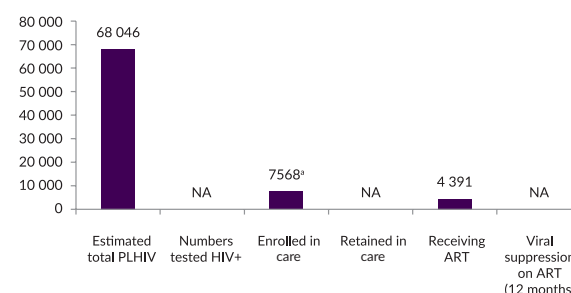
## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2012) 0 (0/17)

% retention in care at 12 months Not available

% of patients who had viral load suppression after 12 months of ART Not available

## The treatment cascade



<sup>a</sup> Registered at the 18 treatment centres nationwide at the end of 2013. NA: not available.

## Extra source of information

Test-treat-retain cascade analysis: Punjab province, Pakistan, December 2013.

# Occupied Palestinian territory

## General information

**Population:** 182 142 594

**HDI rank:** 146 (low)

**GNI (per capita, Atlas):** US\$ 1380 (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	0 (2010)
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	Not available
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	Not available
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

The occupied Palestinian territory is considered to have low HIV prevalence. Since HIV case reporting began in 1988, a cumulative 72 cases have been identified up to end 2011. Surveillance in HIV is still in its nascent stages. A 2010 bio-behavioural survey conducted in East Jerusalem with 199 PWID found an absence of HIV infection, but a prevalence of hepatitis C virus (HCV) of 38.2%.

## HIV testing and treatment access

Number of HTC facilities	13
Number of ART facilities	2
Numbers of adults and children receiving ART	26
Numbers of children receiving ART	1
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

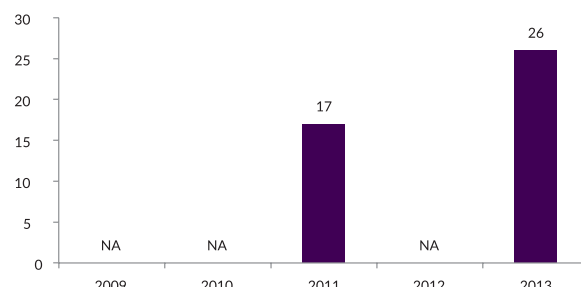
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2009)	20	0 (0)
TB patients (2009)	25	0 (0)
STI patients (2009)	65	0 (0)
Others: Blood donors (2009)	58 184	0 (0)
Others: Out-migrants (2009)	272	0 (0)

<sup>1</sup> Reported data from 2012.

Voluntary HTC is available at all 12 district clinics, along with two drop-in centres. Facility-based HIV surveys among prisoners at the regional level in 2010 did not identify any cases.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

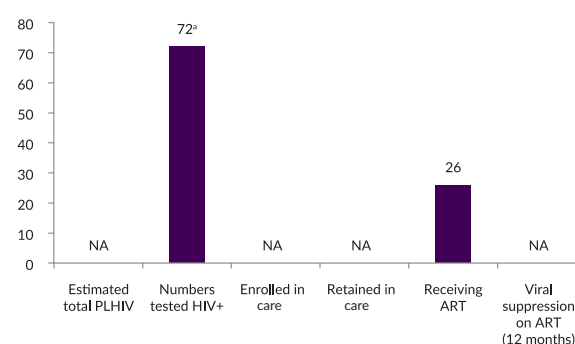
In 2013, 26 people were receiving ART, including one child; 15 (60%) adults were on first-line regimens while 10 (40%) were on second-line regimens.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	0 (2012)
% retention in care at 12 months	95.2–100 (–) (2012)
% of patients who had viral load suppression after 12 months of ART	Not available

There were no ARV drug stock-outs in the past 12 months and all patients received appropriate triple combination regimens. CD4 count and viral load testing capacity is available. In 2013, 24 CD4 count and 17 viral load tests were conducted.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported at the end of 2011.  
NA: not available.

# Qatar

## General information

**Population:** 2 168 673

**HDI rank:** 31 (very high)

**GNI (per capita, Atlas):** US\$ 85 550 (high income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	< 0.2% (2011)
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0.09 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	Not available
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

Qatar is a low HIV prevalence country with less than 10 new cases diagnosed annually. The available information suggests that the primary mode of transmission is heterosexual.

## HIV testing and treatment access

Number of HTC facilities	1
Number of ART facilities	1
Numbers of adults and children receiving ART	52 (2011)
Numbers of children receiving ART	8 (2011)
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

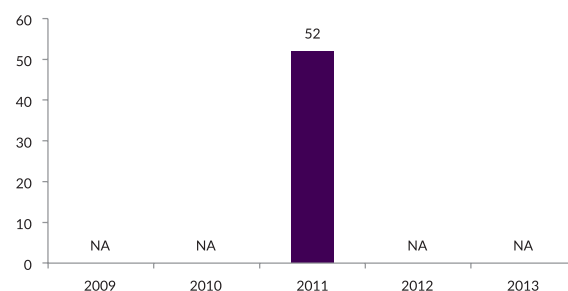
## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees	Not available	Not available
TB patients	Not available	Not available
STI patients	Not available	Not available

Over 500 000 HIV tests are conducted annually through both voluntary and mandatory screening for premarital couples, pregnant women, pre-employment permit applications, all students travelling abroad, all people who use drugs referred to health care services, and migrant workers. Pregnant women are routinely offered and tested for HIV. HIV testing is not routinely offered to STI and TB patients.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

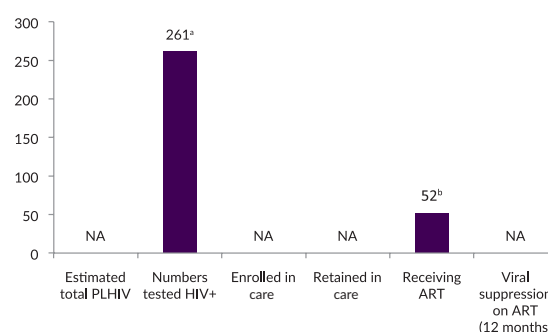
Free treatment is available to all PLHIV irrespective of nationality. No reports of mother-to-child transmission occurred in 2010–2011. Integrated HIV services are established at a tertiary hospital which provides comprehensive services and social welfare support.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	Not available
% of patients who had viral load suppression after 12 months of ART	Not available

There is no information available on the quality of services including retention in ART care.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS case reporting (all) at the end of 2012.

<sup>b</sup> People receiving ART at the end of 2011.

NA: not available.

# Saudi Arabia

## General information

**Population:** 28 828 870

**HDI rank:** 34 (very high)

**GNI (per capita, Atlas):** US\$ 26 200 (high)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	< 0.1% (2011)
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	0.1 (2012)
HIV prevalence in new TB cases (%)	2.2 (2012)
HIV prevalence in STI patients (%)	1.7 (2012)
HIV prevalence in blood donors (%)	0.019 (2012)
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available
Others: HIV prevalence in prisoners (%)	1.2 (2012)

Saudi Arabia has a low HIV prevalence of less than 0.1%. Heterosexual transmission seems to be the predominant route of infection according to case reporting.

## HIV testing and treatment access

Number of HTC facilities	26 HTC and 8 mobile HTC
Number of ART facilities	12
Numbers of adults and children receiving ART	2388
Numbers of children receiving ART	12
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID <sup>a</sup>	571	20 (3.5)
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2012)	2 400	3 (0.1)
TB patients (2012)	1 200	26 (2.2)
STI patients (2012)	1 200	20 (1.7)
Others: Blood donors (2012)	445 000	85 (0.02)
Others: Prisoners (2012)	1 200	16 (1.2)

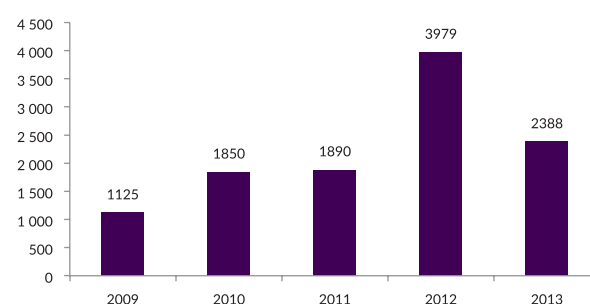
<sup>a</sup> Screening of PWID admitted to drug detoxification centres in Riyadh, Jeddah and Daman in 2013.

The majority of HIV testing is performed in the context of mandatory screening, such as for blood donors, STI and TB patients, prisoners, PWID, applications for residency, and work permits for Saudis and non-Saudi nationals. Premarital testing is compulsory.

HIV testing is not routinely offered to pregnant women and there is no mandatory testing during pregnancy. Voluntary HTC services have been expanded to all 20 regions of the country. Mobile units utilizing rapid testing have been introduced in eight big cities.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

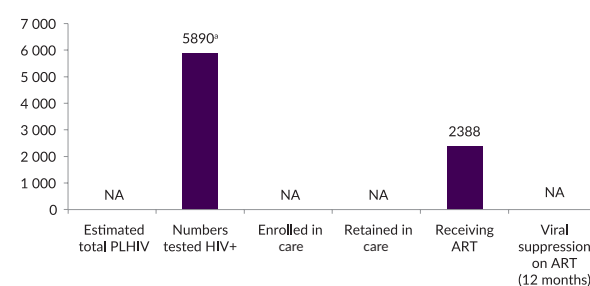
Universal free treatment was provided in 2013 to all Saudi citizens and non-citizens who have considerable ties with nationals (for example, the non-Saudi spouse of a citizen) at 12 treatment centres throughout the country. Lifelong ART treatment (Option B+) is provided to all pregnant women living with HIV.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	100 (530/530)
% of patients who had viral load suppression after 12 months of ART (2010)	97.0

Data on the quality of care is limited. Acquired HIV drug resistance is monitored routinely; no other data on HIV drug resistance are available.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS case reporting (Saudi nationals) at the end of 2013. NA: not available.



# Somalia

## General information

**Population:** 10 495 583

**HDI rank:** Not available

**GNI (per capita, Atlas):** US\$ Not available (low income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.53 [0.33–0.84]
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	5.2 (2008)
HIV prevalence in ANC attendees (%)	0.2 (2011)
HIV prevalence in new TB cases (%)	2.9 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.3 (2011)
Estimated numbers of PLHIV (all ages)	32 313 [20 730–50 743]
Estimated numbers of new infections	3324 [1634–6457]
Estimated AIDS-related deaths	2526 [1625–3775]

The overall HIV prevalence is 0.5%, with marked differences among the three administrative zones of Northwest, Northeast and South-Central Somalia. Limited data suggests low prevalence in Northeast and South-Central Somalia, and concentrated prevalence in Northwest Somalia with higher prevalence rates reported in locations of significant trade-driven mobility across all zones.

## HIV testing and treatment access

Number of HTC facilities	51
Number of ART facilities	11
Numbers of adults and children receiving ART	1492
Numbers of children receiving ART	315
ART coverage in adults (%)	4 [3–7]
ART coverage in children (%)	6 [4–9]

## Numbers of people tested and percentage found to be HIV positive

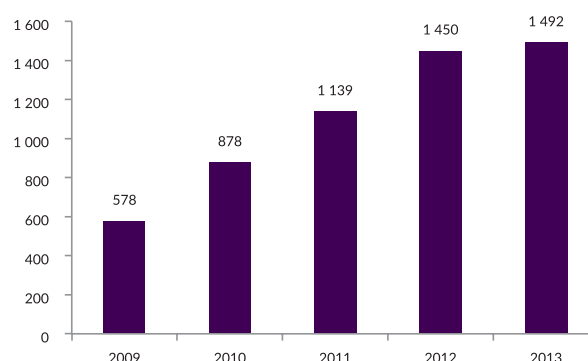
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2011)	30 426	– (0.2)
TB patients (2012)	5359	192 (3.6)
STI patients	Not available	Not available

Voluntary HTC services were available in 51 (49 public and 2 private) facilities in 2012.

## ART coverage

ART coverage in adults = 4%.

ART coverage in children = 6%.



PLHIV receiving ART, 2009–2013

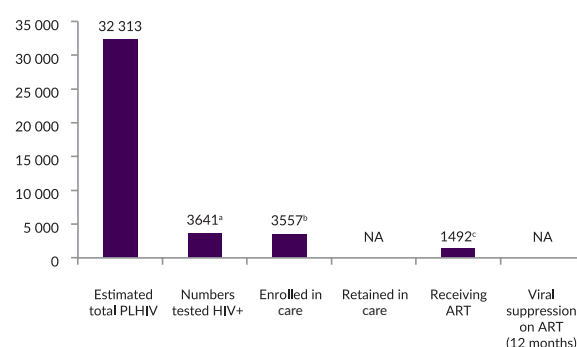
About 9800 [6700–15 000] adults and 3100 [2000–4800] children are estimated to have required ART in 2013. Overall treatment coverage was 5% [3–7%] in 2013, according to the national criteria for starting ART at a CD4 count of less than 500 cells/mm<sup>3</sup>. Almost all adults and children were receiving first-line regimens. Second-line ART is available.

Approximately 1800 [1100–2900] pregnant women were estimated to require PMTCT in 2013. The coverage was 3% [2–5%].

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2012)	0 (0/10)
% Retention in care at 12 months	81.5 (–)
% Retention in care at 24 months	70.6 (–)
% Retention in care at 60 months (2011)	51.3 (20/39)
% of patients who had viral load suppression after 12 months of ART	Not available

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported till the end of 2011.

<sup>b</sup> Enrolled in care till the end of 2012.

<sup>c</sup> Receiving ART at the end of 2013. This is an increase of 42 new ART patients from the 1450 reported to be on treatment (78% of 1860 patients ever started ART) at the end of 2012.

NA: not available.

# Sudan

## General information

**Population:** 37 964 306

**HDI rank:** 166 (low)

**GNI (per capita, Atlas):** US\$ 1 130 (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.24 [0.16–0.34]
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	2.4
HIV prevalence in SW (%)	1.6
HIV prevalence in ANC attendees (%)	0.4 (2012)
HIV prevalence in new TB cases (%)	10 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	Not available
Estimated numbers of PLHIV (all ages)	49 287 [33 774–69 831]
Estimated numbers of new infections	5204 [2109–9726]
Estimated AIDS-related deaths	3101 [2538–3787]

## HIV testing and treatment access

Number of HTC facilities	808 including 143 HTC sites
Number of ART facilities	34
Numbers of adults and children receiving ART	3308
Numbers of children receiving ART	250
ART coverage in adults (%)	7 [5–10]
ART coverage in children (%)	5 [4–7]

## Numbers of people tested and percentage found to be HIV positive

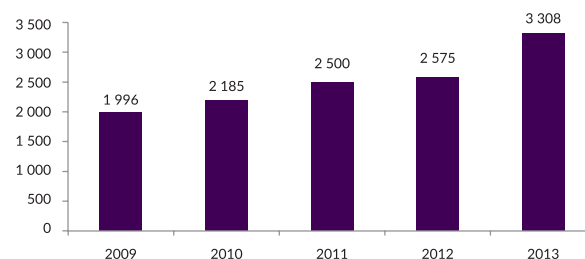
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2012)	37 055	110 (0.3)
TB patients (2012)	3070	231 (7.5)
STI patients	Not available	Not available
Others: Blood donors (2009)	56 178	– (0.46)

Voluntary HTC services have significantly expanded from 55 centres in 2007 to 808 in 2013, including 143 static and mobile HTC outreach services, and facility-integrated testing at 227 PMTCT, 80 TB and 358 STI and primary health care sites. The numbers of people receiving HIV tests was 233 617 in 2013.

## ART coverage

Adult ART coverage = 7 %.

ART coverage in children = 5 %.



PLHIV receiving ART, 2009–2013

Universal access to treatment, care and support is provided at 34 ART centres. In 2013, an estimated 18 000 [14 000–23 000] adults and 3300 [2700–4200] children needed ART, following national treatment criteria. ART coverage was 7% in adults and 5% in children.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2012) 0/30 (0)

% retention in care at 12 months 69.1

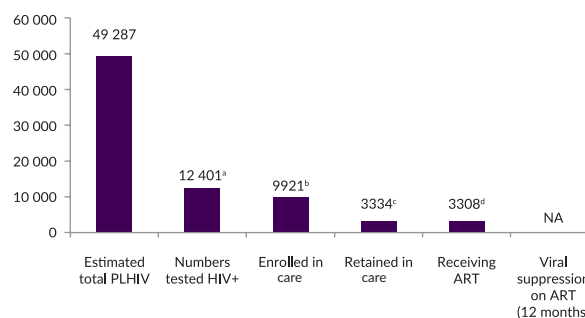
% retention in care at 24 months 55.1

% Retention in care at 60 months 42.5

% of patients who had viral load suppression after 12 months of ART Not available

In 2012, although there were no reports of drug stock-outs, several treatment sites had interruption of supply for several ARV drugs.

## The treatment cascade



<sup>a</sup> Total number of PLHIV according to public sector data at the end of 2012: does not exclude duplicates and PLHIV diagnosed prior to 2006.

<sup>b</sup> Operationally defined as "the total number of patients who were ever prescribed co-trimoxazole and/or ART" at the end of December 2012 (i.e. in pre-ART and ART).

<sup>c</sup> Defined as "the total number of patients registered to have collected their co-trimoxazole or ARVs as of December 2012".

<sup>d</sup> Receiving ART in 2013: an increase of 733 new ART patients from 2575 (43.3% of the 5935 people ever started on ART) at the end of 2012.

NA: not available.

## Extra source of information

HIV test, treat and retain cascade analysis in Sudan 2013.

# Syrian Arab Republic

## General information

**Population:** 22 845 550

**HDI rank:** 118 (medium)

**GNI (per capita, Atlas):** US\$ not available (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	0 (2011)
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	0 (2011)
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0 (2011)
HIV prevalence in STI patients (%)	0 (2011)
HIV prevalence in blood donors (%)	0.004 (2011)
Estimated numbers of PLHIV (all ages)	1152 (2008)
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

The Syrian Arab Republic has a low prevalence HIV epidemic.

## HIV testing and treatment access

Number of HTC facilities	24
Number of ART facilities	Not available
Numbers of adults and children receiving ART	152
Numbers of children receiving ART	1
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

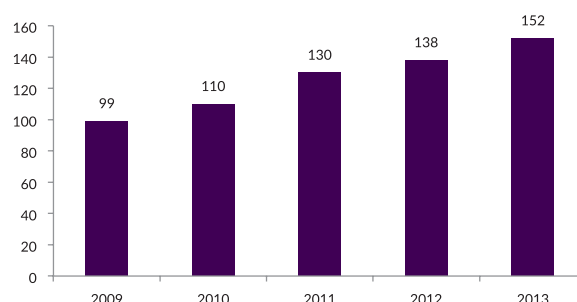
## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2011)	478	0 (0)
MSM (2011)	5	0 (0)
SW (2011)	108	0 (0)
ANC attendees (2011)	177	0 (0)
TB patients (2011)	822	0 (0)
STI patients (2011)	8989	0 (0)
Others: Blood donors (2011)	416 350	18 (0.004)

24 centres (14 public facilities and 10 nongovernmental) provide HTC services including HIV rapid testing. The majority of HIV testing is conducted in the context of mandatory screening policies.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months

Not available

% retention in care at 12 months

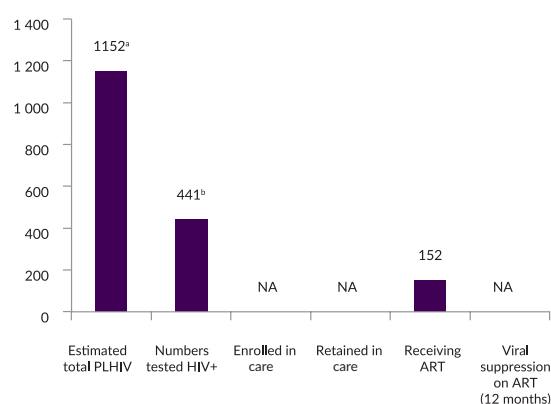
Not available

% of patients who had viral load suppression after 12 months of ART

Not available

There is no information available on quality of services. Both CD4 count and viral load testing facilities are available. In 2013, 65 CD4 count and 90 viral load tests were performed.

## The treatment cascade



<sup>a</sup> Estimated total PLHIV in 2008.

<sup>b</sup> Cumulative HIV/AIDS case reporting (Syrian nationals) at the end of 2011. NA: not available

# Tunisia

## General information

**Population:** 10 886 500

**HDI rank:** 90 (high)

**GNI (per capita, Atlas):** US\$ 4360 (upper-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.05 [0.03–0.08]
HIV prevalence in PWID (%)	2.9 (2011)
HIV prevalence in MSM (%)	10.1 (2011)
HIV prevalence in SW (%)	0.6 (2011)
HIV prevalence in ANC attendees (%)	Not available
HIV prevalence in new TB cases (%)	0.2 (2012)
HIV prevalence in STI patients (%)	0 (2010)
HIV prevalence in blood donors (%)	0.003 (2010)
Estimated numbers of PLHIV (all ages)	3431 [2075–5392]
Estimated numbers of new infections	546 [266–942]
Estimated AIDS-related deaths	130 [65–227]

The first reported HIV case was in 1985. In 2013, Tunisia remained a low HIV prevalence country at 0.05%. Recent surveillance indicates an evolution into a concentrated epidemic among key populations.

## HIV testing and treatment access

Number of HTC facilities	80 (2012)
Number of ART facilities	4
Numbers of adults and children receiving ART	546
Numbers of children receiving ART	15
ART coverage in adults (%)	16 [10–26]
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

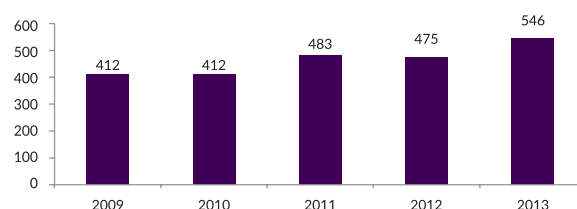
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID (2011)	807	24 (0.1)
MSM (2011)	1001	101 (10.1)
SW (2011)	988	6 (0.6)
ANC attendees	Not available	Not available
TB patients (2010)	Not available	– (0.5)
STI patients (2010)	600	0 (0)
Others: Blood donors (2009)	181 486	– (0.004)

HTC is available at 80 sites, representing 3% of the total 2591 public and private health facilities in the country in 2012. Since 2010, all TB patients are routinely offered HIV testing. HIV prevalence in new TB cases was 0.2% in 2012. The routine offer of HIV testing for all pregnant women is being introduced in 2014.

## ART coverage

Adult ART coverage = 16 %.

ART coverage in children = Not available.



PLHIV receiving ART, 2009–2013

ART treatment is available at four tertiary-level hospitals. Two-thirds of ART patients are under the care of one hospital in Tunis. In 2013, 2300 [1500–3500] adults were estimated to require ART, following national criteria for treatment eligibility. Overall ART coverage for adults was 16% [10–26%] with two-thirds of adults receiving first-line ART.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months 100 (4/4)

% retention in care at 12 months 91.3 (105/115)

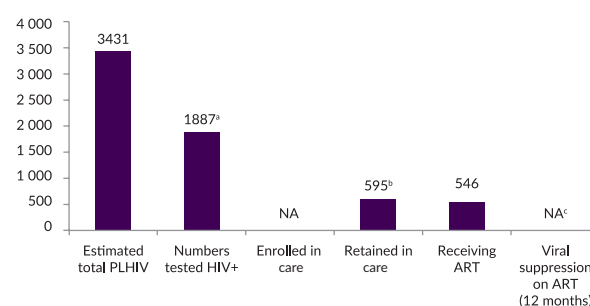
% retention in care at 24 months 75.3 (67/89)

% retention in care at 60 months 57.1 (44/77)

% of patients who had viral load suppression after 12 months of ART 66.7 (40/60)

ARV drug stock-out was reported at only one ART site in 2012, but all four clinics reported having at least one ARV stock-out in 2013. During this period, patients were substituted with other ARVs in order to avoid treatment interruption. Overall retention in care at 12 months of treatment initiation was 88.5% in 2010, 89.1% in 2012 and 91.3% in 2013. By 60 months of treatment, around half remain in the programme. Of 60 people receiving treatment in 2012–2013, viral load testing at 12 months of ART showed 66.7% ( $n = 40$ ) had viral suppression below 1000 copies/ml.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported since 1985 till end of 2013.

<sup>b</sup> Retained in care defined for this analysis as "registered for HIV care at least once during 2013".

<sup>c</sup> Data available only for 60 people initiating treatment who had viral load testing at 12 months in 2012–2013. The proportion of people on ART with viral suppression < 1 000 copies/ml was 66.7% ( $n = 40$ ).

NA: not available.

# United Arab Emirates

## General information

**Population:** 9 346 129

**HDI rank:** 40 (very high)

**GNI (per capita, Atlas):** US\$ 38 620<sup>1</sup> (high)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	Not available
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	Not available
HIV prevalence in SW (%)	Not available
HIV prevalence in ANC attendees (%)	0 (2012)
HIV prevalence in new TB cases (%)	3.7 (2011)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	< 0.01 (2012)
Estimated numbers of PLHIV (all ages)	Not available
Estimated numbers of new infections	Not available
Estimated AIDS-related deaths	Not available

The United Arab Emirates has a low HIV prevalence. HIV case reporting data indicates that the main route of HIV transmission is heterosexual.

## HIV testing and treatment access

Number of HTC facilities	Not available
Number of ART facilities	11 (2012)
Numbers of adults and children receiving ART	267
Numbers of children receiving ART	3
ART coverage in adults (%)	Not available
ART coverage in children (%)	Not available

## Numbers of people tested and percentage found to be HIV positive

	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM	Not available	Not available
SW	Not available	Not available
ANC attendees (2012)	67 198	0 (0)
TB patients (2012)	85	3 (3.5)
STI patients	Not available	Not available
Others: Blood donors (number of blood units screened) (2012)	66 398	2 (0.003)
Others: Premarital screening (2012)	33 041	3 (0.009)

<sup>1</sup> Reported data of 2012.

Others: Residency applicants (2012)

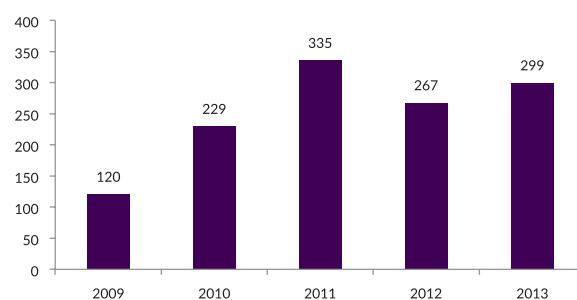
1 633 899

293 (0.02)

The majority of HIV testing is conducted among non-United Arab Emirates nationals in the context of residency applications. All pregnant women are screened for HIV. The policy on voluntary HTC has changed recently to allow anonymous voluntary testing; however, implementation is yet to start.

## ART coverage

ART coverage in adults and children is not available.



PLHIV receiving ART, 2009-2013

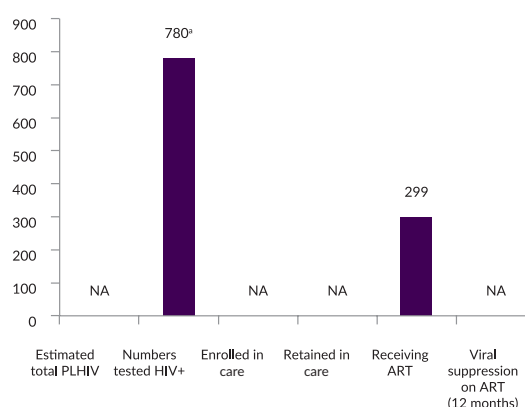
Universal access to free and comprehensive ART care and support is provided to all United Arab Emirates nationals and non-nationals.

## Quality of treatment services

% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months	Not available
% retention in care at 12 months	Not available
% of patients who had viral load suppression after 12 months of ART	Not available

There is no information on the quality of treatment services as a national health information system for ART follow-up is not established.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported (United Arab Emirates nationals) at the end of 2012.  
NA: not available.

# Yemen

## General information

**Population:** 24 407 381

**HDI rank:** 154 (low)

**GNI (per capita, Atlas):** US\$ 1 330 (lower-middle income)

## HIV epidemic profile

HIV prevalence in adults 15 – 49 years (%)	0.04 [0.02–0.11]
HIV prevalence in PWID (%)	Not available
HIV prevalence in MSM (%)	5.9 (2011)
HIV prevalence in SW (%)	0 (2010)
HIV prevalence in ANC attendees (%)	0.07 (2010)
HIV prevalence in new TB cases (%)	1.3 (2012)
HIV prevalence in STI patients (%)	Not available
HIV prevalence in blood donors (%)	0.04 (2011)
Estimated numbers of PLHIV (all ages)	5962 [3257–15 274]
Estimated numbers of new infections	617 [178–1747]
Estimated AIDS-related deaths	446 [206–1319]

The overall HIV prevalence in Yemen was estimated at 0.04% in 2013. Although classified as a low HIV prevalence country, HIV is emerging among key populations.

## HIV testing and treatment access

Number of HTC facilities	32
Number of ART facilities	5
Numbers of adults and children receiving ART	901
Numbers of children receiving ART	59
ART coverage in adults (%)	15 [6–27]
ART coverage in children (%)	17 [5–35]

## Numbers of people tested and percentage found to be HIV positive

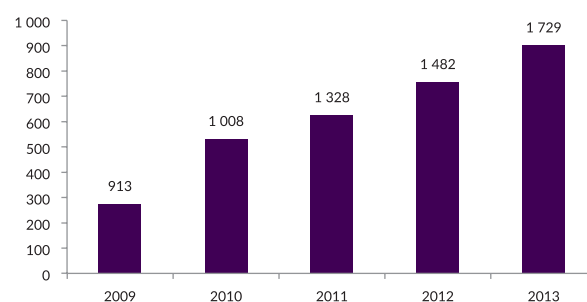
	Numbers who had HIV tests	Numbers found HIV positive (%)
PWID	Not available	Not available
MSM (2011)	253	15 (5.9)
SW (2010)	301	0 (0)
ANC attendees (2012)	4 715	22 (0.5)
TB patients (2012)	612	26 (4.3)
STI patients	Not available	Not available

HTC services expanded from 27 to 32 sites at nongovernmental and public health facilities between 2011 and 2013.

## ART coverage

Adult ART coverage = 15%.

ART coverage in children = 17%.



PLHIV receiving ART, 2009–2013

## Quality of treatment services

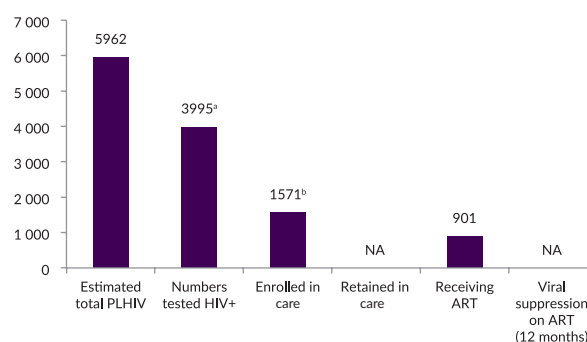
% of ART facilities which experienced a stock-out of at least one required ARV in the last 12 months (2011) 0 (0/5)

% retention in care at 12 months (2012) 77.0 (152/197)

% of patients who had viral load suppression after 12 months of ART Not available

In 2009, 85 of 140 (62%) PLHIV initiating ART were still alive and on treatment at 12 months. There were no reported ART drug stock-outs in 2011 at the five treatment sites, although data for 2012–2013 is not available. CD4 count testing is widely available.

## The treatment cascade



<sup>a</sup> Cumulative HIV/AIDS cases reported at the end of 2013.

<sup>b</sup> Enrolled in HIV care (pre-ART and ART) at the end of 2013.

NA: not available.

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The initiative to “End the HIV treatment crisis” in the WHO Eastern Mediterranean Region was launched in 2013 with the vision of scaling-up access to treatment to achieve universal coverage by 2020. This progress report provides the status of access to the continuum of HIV care in the Region, using data available up to end 2013. The report also describes actions that countries can take scale up access to HIV treatment.