

# Leveraging HIV Treatment to End AIDS, Stop New HIV Infections, and Avoid the Cost of Inaction

Michel Sidibé,<sup>1</sup> José M. Zuniga,<sup>2</sup> and Julio Montaner<sup>3</sup>

<sup>1</sup>Joint United Nations Programme on HIV/AIDS, Geneva, Switzerland; <sup>2</sup>International Association of Providers of AIDS Care, Washington, District of Columbia; and <sup>3</sup>British Columbia Centre of Excellence in HIV/AIDS, Vancouver, Canada

**We have the tools at our disposal to significantly bend AIDS-related morbidity and mortality curves and reduce human immunodeficiency virus (HIV) incidence. It is thus essential to redouble our efforts to reach the goal of placing 15 million people on life-saving and -enhancing antiretroviral therapy (ART) by 2015. In reaching this milestone, we can write a new chapter in the history of global health, demonstrating that a robust, multidimensional response can succeed against a complex pandemic that presents as many social and political challenges as it does medical ones. This milestone is also critical to advance our ultimate goal of ending AIDS by maximizing the therapeutic and preventive effects of ART, which translates into a world in which AIDS-related deaths and new HIV infections are exceedingly rare.**

**Keywords.** HIV prevention; HIV testing; HIV treatment; antiretroviral therapy; health service delivery.

Building on >3 decades of growing efforts to halt and reverse the spread of human immunodeficiency virus (HIV), a firm foundation is now in place to call for the end of AIDS. Antiretroviral therapy (ART), in combination with other HIV prevention methods, plays a unique and essential role in this objective, with its potential to both radically reduce illness and death among people living with HIV and prevent new HIV infections. It is currently estimated that ART has prolonged life among people living with HIV by approximately 5 decades [1]. The use of ART has also been shown to decrease HIV transmission by 96% in a randomized controlled trial among HIV serodiscordant heterosexual couples [2]. Observational and ecological data have also shown that increasing access to ART in different

settings is associated with decreased AIDS-related morbidity and mortality, as well as decreased new HIV diagnoses [3–6].

As of December 2012, 9.7 million people in low- and middle-income countries were receiving ART—a significant milestone. Despite rapid scale-up in recent years, HIV treatment is reaching only about 34% of the 28.6 million people deemed clinically eligible for ART initiation as recommended by the World Health Organization (WHO) consolidated guidelines issued in 2013 [7]. Equally troubling, only 3 of 10 children living with HIV have access to ART in the 21 priority countries in sub-Saharan Africa targeted by the Global Plan Towards the Elimination of New HIV Infections among Children by 2015 [8].

## HISTORIC OPPORTUNITIES

The international community is rapidly approaching the deadline for achieving the 2015 Millennium Development Goals. Given that we have the tools at our disposal to significantly bend AIDS-related morbidity and mortality curves and reduce HIV incidence, it is essential to redouble efforts to reach the goal of placing 15 million people on ART by 2015. In reaching this milestone, we can write a new chapter in the history

Correspondence: José M. Zuniga, PhD, MPH, International Association of Providers of AIDS Care, 1424 K St NW, Ste 200, Washington, DC 20005 (jzuniga@iapac.org).

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of global health, demonstrating that a robust, multidimensional response can succeed against a complex pandemic that presents as many social and political challenges as it does medical ones. This milestone is also critical to advance our ultimate goal to end AIDS, translating into a world in which AIDS-related deaths and new HIV infections are exceedingly rare.

In at least 13 high-prevalence countries where HIV treatment has been brought to scale, the annual increase in the number of people receiving ART now exceeds the number of people newly infected with HIV. A recent study in KwaZulu-Natal, South Africa, linked HIV treatment scale-up with declining HIV incidence [6]. These achievements indicate that the AIDS response is starting to outpace the epidemic, which should reinforce our efforts to achieve similar successes around the globe [9].

As the WHO's 2013 consolidated guidelines emphasize, early ART initiation is essential to leverage the full range of benefits that ART offers. Fully implementing these guidelines would prevent an additional 3 million AIDS-related deaths and avert 19 million new HIV infections between 2013 and 2025 [10]. Yet again, time is of the essence, as experience demonstrates that rapid ART scale-up achieves far greater health gains [9, 11].

## PERSISTENT CHALLENGES

Although ART has reshaped the AIDS response, the HIV treatment revolution has yet to reach many around the world. Only modest gains in ART coverage have been reported in Eastern Europe and Central Asia as well as in the Middle East and North Africa, and ART-eligible individuals in West and Central Africa are notably less likely to obtain ART than those in Eastern and Southern Africa. Treatment coverage is >20% lower among men than among women, and globally the pace of ART scale-up for children <15 years of age is only half that of adults [10]. AIDS-related deaths continue to rise among adolescents, and key populations experience unique barriers to accessing HIV treatment services, not the least of which are stigma and discrimination [12].

Lack of uptake and access to HIV testing and, subsequently, treatment services also diminishes the health benefits of ART at both the individual and population levels. The Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates that only 51% of people living with HIV in sub-Saharan Africa know their HIV status—an important reason why so many people living with HIV in the region first access HIV care and treatment late in the course of infection [12]. Once diagnosed, many people living with HIV are not effectively linked to care, many do not receive ART in a timely manner, and many do not remain engaged in care. As a result of loss to follow-up across the HIV treatment continuum, only about 1 in 4 (24%) people living with HIV in sub-Saharan Africa have a suppressed viral load, the ultimate goal of ART, without which we fail to derive the

therapeutic benefit of HIV treatment or stop new HIV infections via its preventive effect [12].

While wide-scale access to ART is a nonnegotiable element of an effective HIV response, scaling up HIV treatment alone will not suffice. The urgent efforts to ensure that all people clinically eligible for treatment have uninterrupted ART access need to be coupled with strengthened HIV prevention efforts, enabling policies that extend the reach and impact of prevention and treatment programs, immediate actions that eliminate HIV-related stigma and discrimination, and a response grounded in the principles of human rights and gender equality [13].

## GENERATING DEMAND FOR TREATMENT SERVICES

Although, as noted earlier, the number of people who are clinically eligible for HIV treatment now approaches 29 million, the actual demand for treatment services is much lower, which is an underlying factor of ART coverage gaps. To increase the demand for treatment services, HIV testing and counseling must be reconceptualized, radically simplified, and normalized. Passive testing and counseling approaches, which rely on individuals seeking HIV testing on their own, must be combined with more proactive approaches that bring testing to at-risk individuals, including within the context of multidisease testing, while ensuring at all times that testing remains entirely voluntary and consensual. A reconceptualized approach to HIV testing includes full implementation of provider-initiated testing and counseling in healthcare settings and a significant increase in community-based testing, including the prudent use of home-based self-testing. It also includes the need for healthcare providers to reconsider how they view treatment by unequivocally embracing and subsequently explaining to their patients and communities the importance of knowing one's HIV status and the evidence-based benefits of early ART initiation at the individual, community, and public health levels.

To generate demand for universal access to HIV treatment, communities must be more effectively engaged as critical partners in ART scale-up. In a growing number of countries, community-centered campaigns that incorporate HIV testing and counseling as one element of a multidisease approach have proven effective in promoting knowledge of HIV status [12]. Closing the HIV treatment gap requires strategic investments in health systems strengthening in order to enable communities to promote HIV testing and counseling, increase treatment literacy, and leverage HIV treatment as a gateway for people to access a continuum of essential health services. HIV treatment can and should be fully integrated with maternal and child health services, sexual and reproductive health services, harm reduction and treatment services for drug dependence, and community-based and workplace HIV services.

Our attention should also be focused on health promotion, including access to services beyond ART that will prevent at-risk HIV-negative individuals from becoming infected in the first place.

## **IMPROVING DELIVERY OF TREATMENT SERVICES**

Delivering HIV treatment must also be redesigned and simplified to accelerate our progress. This requires an overhaul of the traditional methods by which HIV treatment has been delivered so that it is more efficient, more effective, and more equitable. Community approaches to health service delivery should be brought to the forefront, bringing treatment closer to where people live rather than creating or exacerbating a gulf between those requiring and those providing the service. In other words, decentralizing services reduces the need for individuals to travel long distances and permits greater community involvement in service delivery.

For example, the full integration of tuberculosis and HIV programs and services not only leverages opportunities for more efficient service delivery, but also advances a more holistic, people-centered approach to health services. In addition, rationally redistributing tasks among the multiple cadres of existing health workers and shifting certain aspects of service delivery to a new generation of community health workers will not only help to improve and more efficiently scale up access to HIV treatment but also facilitate access to other types of healthcare and health promotion services for the communities they are serving. Programs can be reoriented to ensure much more rigorous monitoring of outcomes along the HIV treatment continuum and assisted to develop locally tailored approaches to improve those outcomes, such as involving peer workers as treatment navigators as a means to increase rates of retention in care.

Much progress has been and will continue to be made to reduce antiretroviral drug-related side effects and toxicities, as well as to address onerous pill burdens. From a combination of >15 pills a day that was routinely prescribed just a few years ago, the majority of patients today are initiated on ART regimens consisting of 1 pill per day in a fixed-dose combination. The evolution has benefited many, particularly with respect to the challenge of achieving optimal ART adherence; however, innovation must continue to be leveraged to further simplify HIV treatment, such as the ongoing research around longer-acting antiretroviral drugs. This will further reduce ART-related side effects and toxicities, enhance adherence, achieve maximum effectiveness, and significantly minimize the risk of costly drug resistance.

There have been dramatic reductions in the cost of antiretroviral drugs—from US\$15 000 per person per year in 2001 to

<US\$100 today for first-line ART regimens in some countries. Further reducing ART and related costs (eg, diagnostics) should remain a priority, particularly for people in low- and middle-income countries. Further, cost avoidance can also be derived from strengthening ART programs, thus preventing avoidable treatment failure and consequent drug resistance, which require more expensive second- and third-line ART regimens.

Urgent attention is also required to bring services to populations that experience unique barriers to access. Expanding earlier ART access for newly diagnosed infants requires countries to ensure 100% active case-finding for all children born of mothers living with HIV, and universal access to HIV treatment for infants testing positive for HIV. Similarly expanded ART access should be our goal with respect to pregnant women living with HIV, in line with the WHO's recommendation to offer life-long ART to all HIV-positive pregnant women regardless of their CD4 count (Option B+) [7]. Tailored efforts are needed to encourage women and men to seek HIV testing and treatment services, to develop services that are accessible to and user-friendly for young people as well as an aging population of HIV-positive individuals, and to implement community-driven, rights-based outreach and service channels for key marginalized populations, such as men who have sex with men, injecting drug users, and sex workers. Punitive laws and other structural impediments that deter access to HIV testing and treatment services should immediately be removed, both because they represent violations of human rights and because they undermine efforts to control HIV.

## **MAKING SMART INVESTMENTS**

To mobilize the financial resources that will be needed to achieve and sustain universal access to HIV treatment, all stakeholders in the HIV response, including countries and international donors, must continue to share responsibility for the global AIDS response. UNAIDS recommends that countries develop national investment cases that define the most strategic use of resources, identify opportunities for efficiency gains, and describe clear plans for long-term financing, with an emphasis on innovative domestic financing sources and the rapid scale-up of HIV treatment. At least 14 countries have begun aligning national HIV responses with investment principles that include treatment as a keystone activity, with an additional 30 countries planning to develop a national HIV investment case over the next 2 years [14].

Investing wisely requires that resource allocation reflects the mix of approaches that is calculated to maximize the health returns for available funding. Rational resource allocations also need to be focused on the geographic settings and populations with the greatest need. Kenya, for example, has pledged to prioritize HIV investments in the 9 counties that account for 54%

of new HIV infections, while Nigeria is reallocating resources towards the 12 states and the Federal Capital Territory that collectively represent 70% of the country's HIV burden [14]. Strategically designing national or regional antiretroviral procurement tenders and improving drug forecasting and distribution systems can help further reduce drug costs and avert stock-outs.

All countries should actively explore innovative financing options to ensure a robust, sustainable response. A growing number of countries are exploring various financing strategies, such as a dedicated HIV tax levy or the creation of a national HIV or health trust fund, and transitioning towards national self-financing of the HIV response [14]. Even with such innovations, low-income countries and those with especially heavy HIV burdens will continue to require external assistance to close the HIV treatment gap, highlighting the urgent importance of strengthened and sustained support from the international community, particularly from the Global Fund to Fight AIDS, Tuberculosis and Malaria and the US President's Emergency Plan for AIDS Relief (PEPFAR).

## MAKING IT HAPPEN

To drive success and ensure accountability, countries should take steps to develop new, ambitious national treatment targets beyond 2015 that aim to achieve the end of AIDS. In addition to coverage targets, countries should identify specific goals with respect to knowledge of HIV status, linkage to care, and long-term retention in care. Treatment targets should take into account the WHO's 2013 consolidated guidelines, which nearly doubled the number of people clinically eligible for ART.

With so much at stake, and with the tools at our disposal to envision the end of AIDS, there is no room for complacency. Building on the decades-long history of the global response to AIDS, we must do what must be done now: Get people tested. Link people who test HIV negative to prevention services. Link people who test HIV positive but who are not clinically eligible for ART by current criteria to comprehensive, holistic care. Treat people who need ART so that they may stay alive, healthy, and productive members of society. Strengthen health systems. Simplify management protocols. Develop better, less expensive drugs. Make smart investments. And leverage the full potential of HIV treatment to prevent not just AIDS-related morbidity and mortality, but also HIV transmission, thus avoiding the

inevitable cost of inaction. We must hold nothing back as we work to transform the end of AIDS from a promise into reality.

## Notes

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