

# MAXIMIZING THE TREATMENT AND PREVENTION POTENTIAL OF ANTIRETROVIRAL DRUGS: EARLY COUNTRY EXPERIENCES TOWARDS IMPLEMENTING A TREAT-ALL POLICY

JULY 2015

## HIV TREATMENT





PROGRAMMATIC UPDATE

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Maximizing the treatment and prevention potential of antiretroviral drugs: early country experiences towards implementing a treat-all policy

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# EXECUTIVE SUMMARY

WHO guidelines on antiretroviral therapy (ART) have evolved during the past decade towards recommending earlier treatment, as evidence has shown clinical and public health benefit, treatment has become simpler, more tolerable and more affordable, and systems for ARV delivery have been streamlined for scale. This past year, important new evidence about when to start ART has shifted the pendulum even further, the outcomes of which are being considered in the 2015 update of the WHO consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Many countries have already begun to implement earlier treatment approaches as part of a national policy or pilot programmes with the goal of scaling up to the entire population once key lessons are learned.

Brazil is one of two middle-income countries that recommend offering initiation of ART at any CD4 cell count. As of the end of 2014, about 400 000 people were taking ART in Brazil. After disseminating and implementing the new national ART protocol, the number of people living with HIV initiating ART increased by more than 30% compared with the previous period (from 57 000 people per year in 2013 versus 74 000 people per year in 2014). The resulting push for initiating ART earlier in Brazil has also seen a rise in CD4 count at the time of starting treatment and a reduction in the number of people presenting with advanced disease.

In Rwanda, an estimated 210 000 people are living with HIV, including about 26 000 children younger than 15 years. Rwanda is piloting early treatment for key populations. This strategy is expected to result in 12 800 people newly initiated on ART, enabling 7586 people to avoid acquiring HIV infection over a one-year period. The predicted long-term investment would result in a 28% decrease in the number of people newly infected with HIV and a 25% decrease in the number of people dying

from AIDS-related causes over a period of five years. Qualitative surveys with female sex workers have shown that early treatment has high acceptability.

In Viet Nam, where injecting drug use is the leading cause of HIV transmission, six-monthly HIV testing and immediate initiation of ART irrespective of CD4 count for people who inject drugs has been recommended since 2014. The early results from demonstration projects show high levels of retention (94%) and viral suppression (91%) at six months.

Key populations are central to the HIV epidemic in Thailand, and immediate ART initiation for men who have sex with men and transgender people was piloted between 2012 and 2014. Acceptance of immediate treatment was 83%, and 12-month retention (92%) and viral suppression (96%) were also high.

Uganda implemented a policy of treating all children younger than 15 years regardless of immune or clinical status in 2014. A rapid assessment conducted in May 2015 concluded that the change in policy resulted in a 74% increase in the number of children initiating ART and led to an overall increase in ART coverage for children from 22% in 2013 to 32% in 2014. Treatment initiation was also more rapid, and 75% of children and adolescents were reported to start ART within two days after enrolment into care.

Overall, these five country examples demonstrate that scaling up a treat-all policy, across diverse populations (adults, key populations and children) is acceptable and feasible, with early benefits and no immediate evidence of harmful effects. Long-term follow-up will be necessary along with innovative approaches to support adherence and retention for the many years of a lifetime of treatment.

# OVERVIEW OF SCALING UP ACCESS TO ANTIRETROVIRAL THERAPY AND THE IMPACT OF WHO GUIDELINES

## Evolution of WHO guidelines

WHO published the first global antiretroviral therapy (ART) guidelines in 2002 and subsequently revised them in 2003, 2006 and 2010. In June 2013, WHO released the first consolidated guidelines for the use of antiretroviral (ARV) drugs for preventing and treating HIV infection, which brought together clinical, operational and programmatic guidance for all populations across the continuum of HIV services (1). Since 2013, countries have rapidly adopted and implemented many of the new recommendations. WHO ART guidelines over the past decade have evolved towards recommending earlier treatment, as evidence has shown clinical and public health benefit, treatment has become simpler, more tolerable and more affordable, and systems for ARV delivery have been streamlined for scale. This past year, important new evidence about when to start ART (2,3) has shifted the pendulum even further, the

outcomes of which are being considered in the 2015 update of the *WHO consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection*.

This publication provides examples of countries that have taken early steps to implement a variety of programmatic approaches to providing early treatment to everyone or specific population groups regardless of CD4 count. These examples are developed as a companion to the WHO movement towards treating all that will be addressed in the forthcoming 2015 update of the *WHO consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection*, and provides examples of how the new directions to treat everyone living with HIV early are already being successfully applied in low- and middle-income countries.

## 2015 consolidated ARV guidelines (planned release in December 2015)

Recent evidence from clinical trials and observational studies has shown that using ART earlier results in better clinical outcomes for people living with HIV compared with delayed treatment and substantially reduces the risk of transmission (2–7). Clinical trials have also confirmed the efficacy of pre-exposure prophylaxis (PrEP) to prevent people from acquiring HIV in a wide variety of settings and populations (8–16).

In response to this evidence, the WHO convened an external Clinical Guideline Development Group to review the new evidence; they have formulated recommendations that propose greater access to all people living with HIV regardless of CD4 cell count and broader use of ARV drugs for pre-exposure prophylaxis (PrEP).

These new directions towards treating all people living with HIV and adding daily oral pre-exposure prophylaxis as an additional prevention choice for people at substantial risk of HIV as part of combination prevention approaches have the potential to have profound global public health effects on treating and preventing HIV infection and represent another important step towards achieving universal access to ARV drugs for treating and preventing HIV infection, increasing the efficiency, impact and long-term sustainability of ARV drug programmes. They also lay the foundation for reaching the global 90–90–90 targets of 90% of all people living with HIV knowing their HIV status, 90% of people with diagnosed HIV infection receiving sustained ART and 90% of people receiving ART having viral suppression by 2020 and realizing the ultimate goal of ending the AIDS epidemic as a major public health threat by 2030 (17,18).

## Initiating treatment early

Previously, in accordance with the 2013 WHO recommendations on when to start, an estimated 85% of all people living with HIV were eligible to initiate ART, but as of the end of 2014, only 41% of adults and 32% of children living with HIV worldwide were receiving ART (19). There are some country exceptions,

with Botswana and Colombia reporting that more than 70% of people diagnosed with HIV infection are currently receiving ART and Brazil more than 60%, but the gap underscores the urgent need to continue scaling up ART (20).

The progressive evolution towards recommending early initiation of ART has been supported by both randomized clinical trials and observational studies. In 2010, evidence from randomized clinical trials supported a recommendation by WHO to initiate ART at a CD4 cell count of 350 cells/mm<sup>3</sup> (4). In 2011, the HPTN 052 trial reported that the efficacy of treatment in reducing HIV transmission in serodiscordant couples was 96% (5). The trial subsequently reported individual health benefits of early initiation (21). These studies and the consistency of positive effect among observational studies led WHO to recommend an initiation threshold of 500 CD4 cells/mm<sup>3</sup> in 2013 (6,7,22–24). In 2015, the TEMPRANO ANRS 12136 trial reported that the risk of severe HIV-related morbidity was 44% lower with early ART (CD4 count <800 cells/mm<sup>3</sup>) versus ART initiated according to the prevailing WHO guidelines (2). The clinical benefits of early ART were confirmed by the START trial, which reported

a 53% reduction in AIDS events, serious non-AIDS events or death among those initiating ART immediately versus those who postponed until CD4 reached 350 cells/mm<sup>3</sup>. This effect was consistent across countries with different income and geographical regions. All study participants will be offered ART if they are not already on it (3).

Although similar evidence is lacking for older children and adolescents (25), a growing body of evidence suggests that earlier initiation of ART irrespective of clinical and immune conditions could mitigate the negative effects of HIV infection and demonstrates the beneficial effects of ART on growth, nervous system development and immune recovery (26–29). As suggested by early programmatic experiences, treating all children living with HIV is expected to simplify the treatment of children and facilitate the scaling up of treatment, avoiding unnecessary delays in initiating ART (30).

## Countries are leading by example

Many countries have already begun to implement earlier treatment approaches as part of a national policy or pilot projects with the goal of scaling up to the entire population once key lessons are learned. Table 1 outlines a selected group of countries based on their known policies for treating all (also known as test and treat) or treating all within specific

populations, such as female sex workers, people who inject drugs, serodiscordant couples, men who have sex with men and transgender people. Several other countries are engaged in studies evaluating the feasibility and impact of a treat all approach as part of a research programme.



**Table 1. Current status of policies to treat everyone living with HIV in selected countries**

Country	≤500 cells/mm <sup>3</sup> CD4 threshold for initiating ART for adults and adolescents	Treat all people living with HIV	Treat all key populations	Treat all pregnant and breastfeeding women (option B+)	Treat all children younger than 15 years or younger than 10 years
Brazil	✓	✓ (offer ART if CD4 >500 cells/mm <sup>3</sup> )	✓ (offer ART if >CD4 500 cells/mm <sup>3</sup> )	✓	✗ <1 year
France	✓	✓	✓	✓	✓
Indonesia	✗ (CD4 <350 cells/mm <sup>3</sup> )	✗	✓	✓	✗ <5 years
Malawi	✓	✗	✓ (people who inject drugs and serodiscordant couples)	✓	✗ <5 years
Mozambique	✗ (CD4 <350 cells/mm <sup>3</sup> )	✗	✓ (as demonstration projects)	✓	✗ <5 years
Rwanda	✓	✗	✓ (sex workers)	✓	✗ <5 years
Thailand	✓	✓	✓	✓	✓
Uganda	✓	✗	✓ (fisher folk, truckers, sex workers, serodiscordant couples)	✓	✓
United Republic of Tanzania	✓	✗	✓ (serodiscordant couples, sex workers, people who inject drugs and men who have sex with men)	✓	✓
United States	✓	✓	✓	✓	✓
Viet Nam	✗ (CD4 <350 cells/mm <sup>3</sup> )	✗	✓ (people who inject drugs)	✓	✗ <2 years
Zambia	✓	✗	✓ (serodiscordant couples, sex workers, men who have sex with men)	✓	✓

These countries were selected based on their newly adopted and implemented policies on testing and treating or treat all for adults as of mid-2015. Other countries may be moving towards treat all that are not reflected in this table.



# BRAZIL – EARLY TREATMENT FOR ALL POPULATIONS

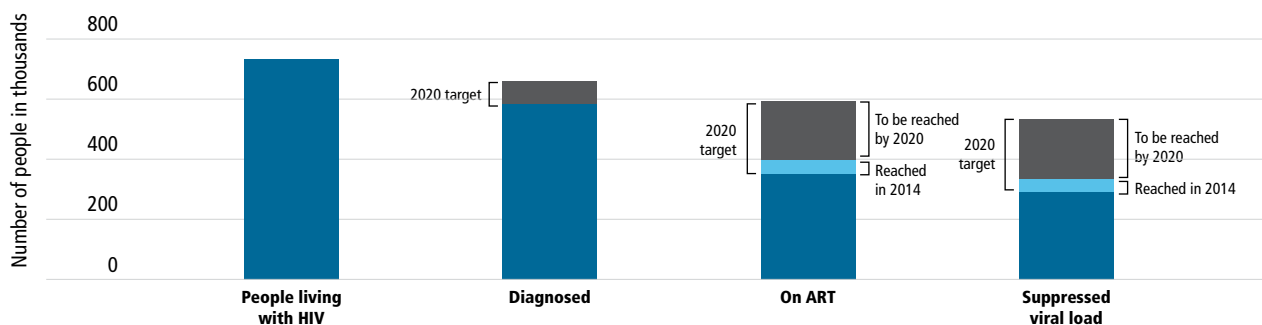
Brazil has a mature and well-resourced HIV prevention and treatment programme and is one of two middle-income countries that recommend offering to initiate ART at any CD4 cell count (31). This recommendation was included in their updated national treatment protocol and implemented from the end of 2013 as part of the Brazilian government's efforts to harness the preventive impact of ART to prevent people from

acquiring HIV infection. As of the end of 2014, about 400 000 people were taking ART in Brazil.

Brazil already had very high rates of testing and treatment uptake; but to reach the global goals, there was a need to move as many people onto treatment as possible in a single year. Thus, national policies removed barriers to initiating ART.

Among 734 000 people living with HIV in Brazil in 2013, 80% knew their HIV status, 48% were receiving ART and 40% were virally suppressed; among the people living with HIV who were known to be still taking ART, 88% were virally suppressed (31). By the end of 2014, Brazil had achieved 70% of its 90–90–90 treatment target and 65% of its viral suppression target. To achieve the 90–90–90 targets by 2020, Brazil estimated that it needs to add 71 000 people living with HIV to the 589 000 who already know their status, initiate an additional 177 000 people on ART and ensure that an additional 185 000 people are virally suppressed over the current 349 000 (31) (Fig. 1.)

**Fig. 1. Brazil's HIV cascade of care in 2014 and gaps to the 90–90–90 targets**



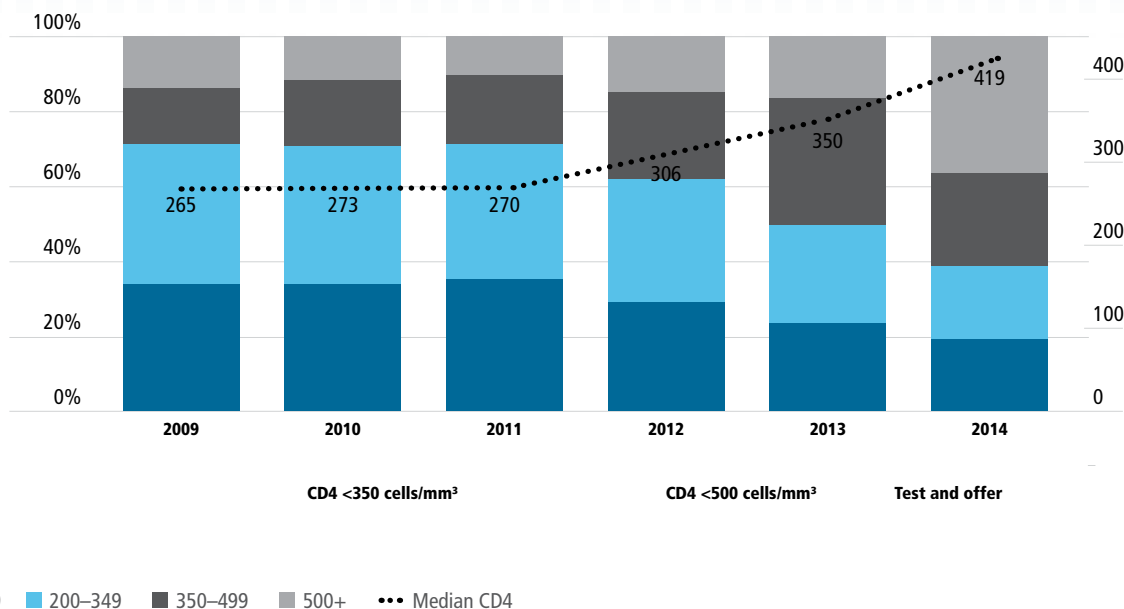
Source: Ministry of Health, Brazil, Department of STD, AIDS and Viral Hepatitis, 2015.

## Programme implementation and results

After the new national ART protocol was disseminated and implemented, the number of people living with HIV initiating ART increased by more than 30% compared with the previous period (from 57 000 people per year in 2013 to 74 000 in 2014) (32). Brazil's Ministry of Health also reported a 46% increase in the number of people living with HIV with CD4 count >500 cells/mm<sup>3</sup> who initiated treatment in the first quarter of 2015. The resulting push for earlier ART initiation in Brazil has also seen the median CD4 count at the time of starting treatment

rise 60%: from 265 cells/mm<sup>3</sup> in 2009 to 419 cells/mm<sup>3</sup> in 2013 (32) (Fig. 2). Another indicator of success was the reduction in the proportion of first-time ART initiators who present late to care with advanced disease, declining from 20% in 2013 to 13% in the first quarter of 2015 (32). As part of the new policy, a concomitant expansion of the HIV testing strategy was promoted. In the first quarter of 2014, about 1.9 million HIV tests were conducted in Brazil, which climbed to 2.2 million (13% increase) at the end of the first quarter of 2015 (32).

**Fig. 2. Median pre-treatment CD4 count and proportion of people living with HIV in Brazil who initiated ART according to the last CD4 count result before initiating ART, by year, 2009–2014**



Source: Ministry of Health, Brazil, Department of STD, AIDS and Viral Hepatitis, 2015.

The proportions of people living with HIV in Brazil retained in services and reporting taking ART at 6, 12 and 18 months after initiating ART were 89% for pre-treatment CD4 count <350 cells/mm<sup>3</sup>, 87% for 350–500 cells/mm<sup>3</sup> and 81% for >500 cells/mm<sup>3</sup>. The proportions of people living with HIV with suppressed viral load <50 copies/ml at 6, 12 and 18 months after ART initiation, were 86% for pre-treatment CD4 count <350 cells/mm<sup>3</sup>, 83% for 350–500 cells/mm<sup>3</sup> and 81% for >500 cells/mm<sup>3</sup>.

The early results showed a statistically significant higher proportion of people living with HIV with undetectable viral load after 18 months among those with CD4 count >500 cells/mm<sup>3</sup>; however, a lower but statistically significance difference was observed in the proportion retained after 18 months, which was 4.2 percentage points lower in the higher CD4 strata (32). Longer-term follow-up of these data trends is warranted.

## Challenges and lessons learned

Unexpected gains from this approach include a rapid increase in the number of people initiating ART in a single year: 74 000 in 2014 versus about 54 000 in 2013. Brazil has not had challenges

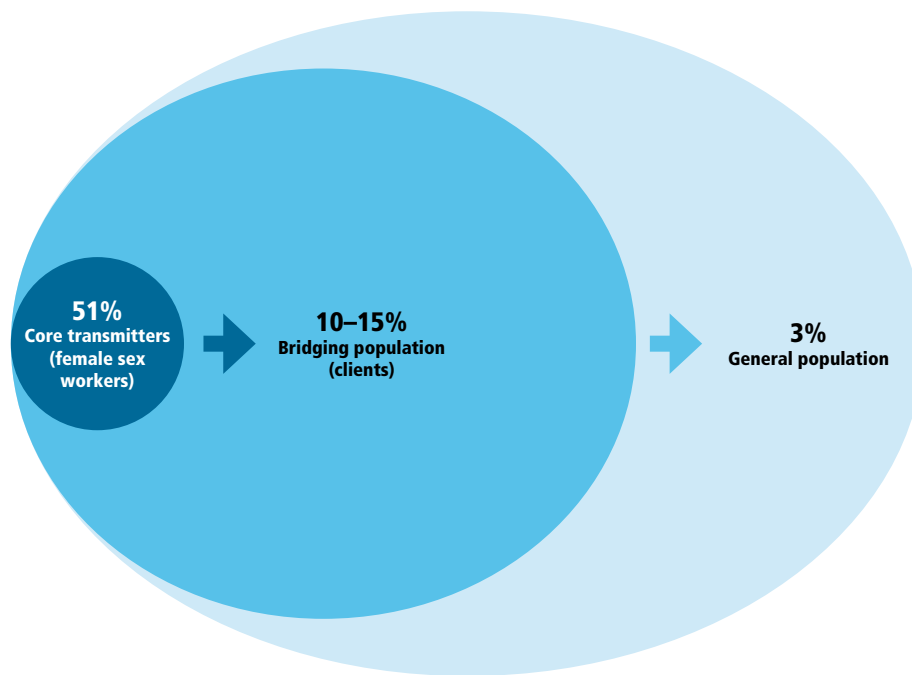
with ARV drug shortages because they had planned well in advance and put in place strong monitoring systems to be able to track progress and take remedial action rapidly (32).

# RWANDA – FEMALE SEX WORKERS, MEN WHO HAVE SEX WITH MEN AND SERODISCORDANT COUPLES

In Rwanda, an estimated 210 000 people are living with HIV, including about 26 000 children younger than 15 years (33). Although Rwanda has a generalized epidemic, HIV is concentrated among several key populations: female sex workers, men who have sex with men and serodiscordant couples. In 2010, the HIV prevalence among female sex workers in Rwanda was 51% (34). Men who have sex with men may contribute to an estimated

15% of the people acquiring HIV infection in Rwanda (35,36). In Rwanda, most of the people newly infected with HIV are in stable heterosexual relationships, with serodiscordant couples the largest contributor (65%) to the people acquiring HIV infection among stable heterosexual couples (37). Modelling has demonstrated how the high prevalence of HIV in key populations contributes to the spread of HIV infection through bridging populations (Fig. 3).

**Fig. 3. Spread of HIV from key populations to the general population in Rwanda**



Source: Rapid assessment report of Rwanda's test and treat strategy for key populations as part of the 2013 HIV treatment guidelines. Kigali: Rwanda Biomedical Center; 2015.

Rwanda's 2013 treatment guidelines recommend initiating ART for: people with CD4 count  $<350$  cells/mm<sup>3</sup>; people with hepatitis B or tuberculosis (TB) coinfection; pregnant women living with HIV (option B+); and female sex workers and men who have sex with men regardless of CD4 count. Since 2011, Rwanda has recommended that the person living with HIV in a serodiscordant partnership initiate ART irrespective of CD4 count. In 2014, Rwanda moved to treat everyone with a

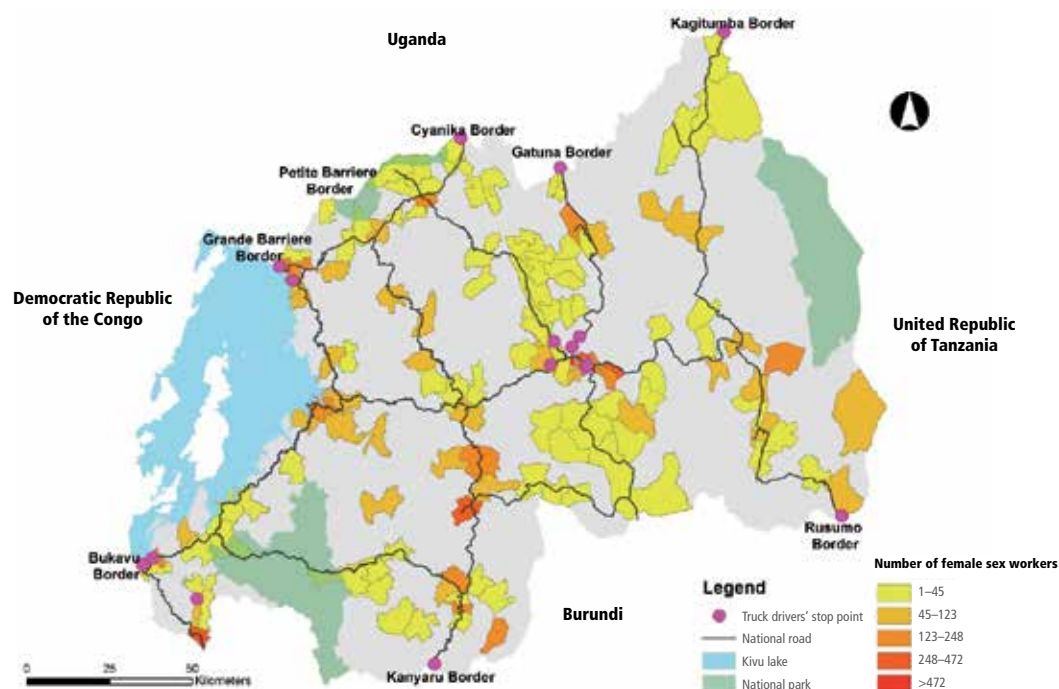
CD4 count  $<500$  cells/mm<sup>3</sup> after the 2013 WHO consolidated guidelines were launched. The new strategy of treating key populations immediately was expected to result in 12 800 people newly initiating ART and 7586 people avoiding new HIV infection over a one-year period. The predicted long-term investment would see a 28% decrease in the number of people acquiring HIV infections and a 25% decrease in the number of people dying from AIDS-related causes during five years (38).

## Programme implementation and results

The expanded ART initiation guidelines for all key populations regardless of CD4 count was rapidly assessed after one year of implementation (39). The assessment found that expanding CD4 criteria and test and treat for key populations would be associated with a 14% increase in the estimated number of individuals eligible to start ART in accordance with WHO guidelines as of

April 2015. Viral load suppression has consistently exceeded 80%. Overall, the HIV programme is performing well, with low rates of estimated loss to follow-up at 2.2% of the people receiving ART and low mortality for people receiving ART at about 1%. Nearly all people (94%) who are coinfecting with TB have been receiving ART in addition to treatment for TB (39) (Fig. 4).

**Fig. 4. Hotspots for estimating the number of female sex workers across Rwanda**



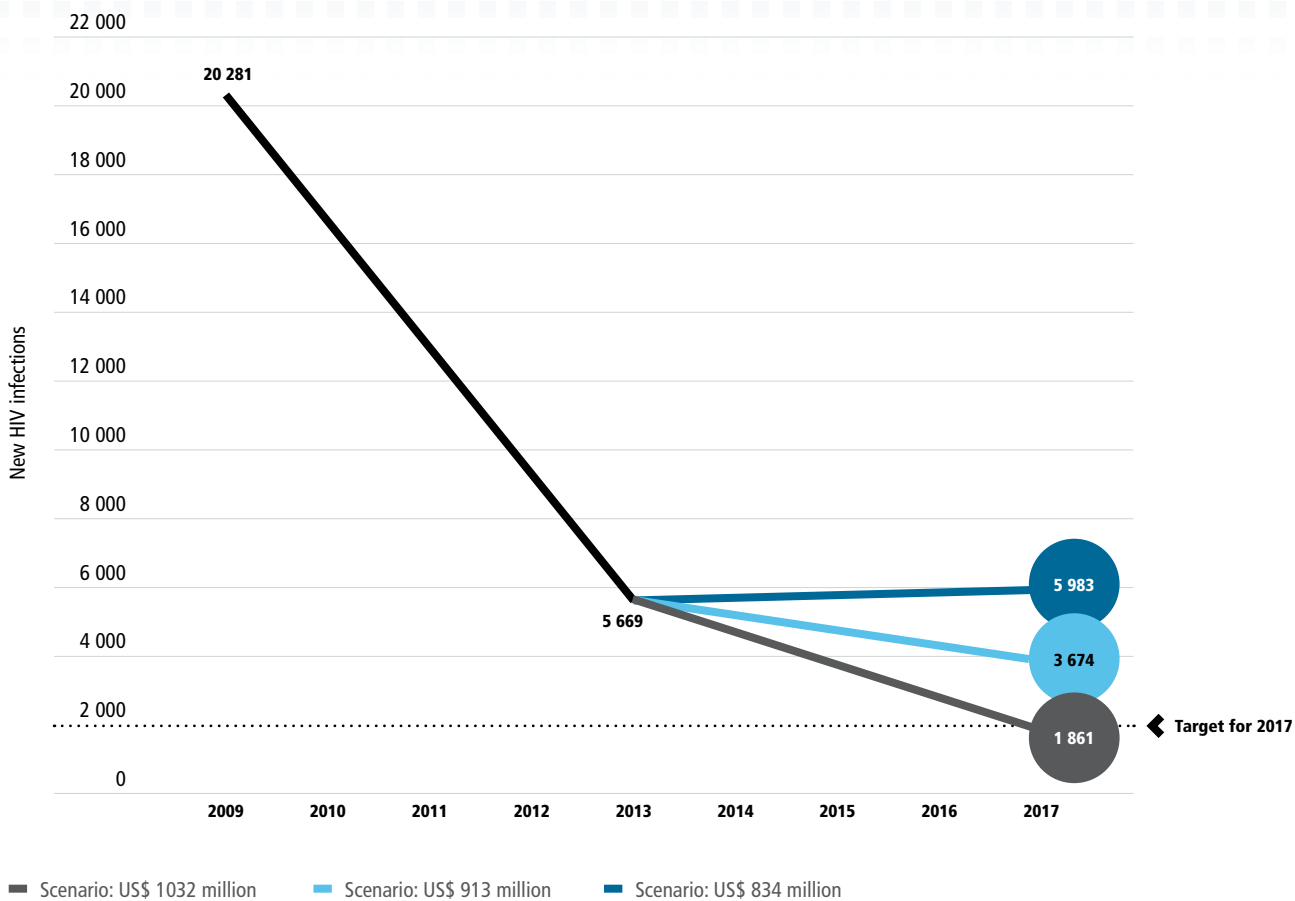
Source: Rapid assessment report of Rwanda's test and treat strategy for key populations as part of the 2013 HIV treatment guidelines. Kigali: Rwanda Biomedical Center; 2015.

**Table 2. Select programme indicators for Rwanda, 2013–2015**

Indicator	Before 2013 WHO guidelines (June 2013)	After 2013 WHO guidelines (April 2015)
Estimated number of people living with HIV	203 899	207 815
Estimated number eligible for ART in accordance with WHO guidelines	160 255	182 156
ART initiated	63%	72%
Virally suppressed	82%	86%
Mortality, pre-ART (deaths per 1000 people per year)	9.7	10.1
Mortality among people receiving ART (deaths per 100 people per year)	1.0	0.9
Children younger than five years of age receiving ART	1504	1214
Loss to follow-up, pre-ART	4%	
Loss to follow-up among people receiving ART	2%	

Modelling estimates predicted that an investment of US\$ 1.032 billion in the new guidelines over five years (2013–2018) would reduce the number of people acquiring HIV infection by two thirds and halve the number of people dying from AIDS-related causes (39) (Fig. 5).

**Fig. 5. Projection of the number of people acquiring HIV infection according to the level of funding**



Source: Rapid assessment report of Rwanda's test and treat strategy for key populations as part of the 2013 HIV treatment guidelines. Kigali: Rwanda Biomedical Center; 2015.

To better understand the challenges and opportunities to engage with key populations, several consultations and in-depth interviews were undertaken. In qualitative assessment, seven discordant couples and 91 female sex workers participated in focus-group discussions; all said that they wished to initiate treatment immediately if they test HIV positive. Seventeen men who have sex with men participated in focus groups, and most

did not disclose to their health-care provider or know that they were eligible for immediately initiating ART. Of the nine health-care providers and four implementing partners participating in focus groups, the main barriers to consistent care reported were the high mobility of female sex workers, which affected their adherence, and difficulty in identifying men who have sex with men, resulting in delays in initiating ART (39).

## Challenges and lessons learned

This early review of the programme demonstrated that testing and offering treatment for key populations in Rwanda is feasible. This approach has been facilitated by decentralization, task shifting and integration of HIV services in more than 90% of health facilities, the strong role of community and support groups in engaging marginalized populations, regular tracing of people lost to follow-up and performance-based funding. Challenges include reaching key populations, stigma and social

acceptability (particularly for men who have sex with men) and the high mobility of young female sex workers. The availability of data on marginalized populations poses a challenge for systematically tracking the success of the new guidelines. For programmatic reasons, implementation of immediate ART initiation for everyone would avoid the challenges of self-identification as female sex workers or men who have sex with men because of stigmatization (39).

# VIET NAM: PERIODIC TESTING AND IMMEDIATE ART FOR PEOPLE WHO INJECT DRUGS IN VIET NAM (V-HEART)

Injecting drug use is the leading cause of HIV transmission in Viet Nam. Local transmission models suggest that periodic HIV testing and counselling and initiating ART regardless of CD4 count among people who inject drugs can reduce HIV-related mortality and transmission (40). Since 2014, Viet Nam has recommended six-monthly HIV testing and immediate initiation of ART regardless of CD4 count for people who inject drugs (40).

## Programme implementation and results

Of 339 participants, 300 (88%) agreed to participate, of whom 151 initiated ART before 31 October 2014 and met eligibility criteria for this analysis. A total of 99% were men, the median age was 36 years, 43% reported methadone maintenance therapy in the past three months and 16% had a baseline CD4 count

In a demonstration project in Thai Nguyen and Thanh Hoa provinces in north-eastern Viet Nam, village health workers, peer educators among people who inject drugs and health personnel were educated on the benefits and risks of immediately initiating ART. People who inject drugs were defined as those who self-reported injecting drug use in the past 30 days and/or were on methadone maintenance therapy. Following consent, participants were followed for 12 months. HIV viral load was assessed before at baseline and after six and about 12 months. Retention was assessed at six months.

>500 cells/mm<sup>3</sup>. The six-month overall retention rate was 94% (12 died and two were lost to follow-up). Among 102 participants for whom the six-month viral load test was available, 91% were virally suppressed (40) (Table 3).

**Table 3. Six-month retention and viral load suppression among people who inject drugs immediately initiating ART in Viet Nam**

Baseline CD4 count	Six-month retention (%)	Viral load suppression at six months (%)
<350 cells/mm <sup>3</sup>	90	88
350–500 cells/mm <sup>3</sup>	100	92
>500 cells/mm <sup>3</sup>	100	80
Total	94	87

## Challenges and lessons learned

These results of this demonstration project demonstrate high rates of acceptance of immediately initiating ART among people who inject drugs and retention in care and viral load suppression during six months of follow-up. Overall, the HIV programme is performing well, with low rates of estimated loss to follow-up at 1.4% of the people receiving ART and mortality for the people

receiving ART of 8.2% after about 12 months. The limitations of the project were small sample size and short follow-up time. The results have informed the proposed revision of the Viet Nam national guidelines to include immediate ART initiation among key populations set to be reviewed in 2015 (40).

# THAILAND – MEN WHO HAVE SEX WITH MEN AND TRANSGENDER TEST-AND-TREAT STUDY

In Thailand, key populations are central to the HIV epidemic. Many studies have been conducted to assess the implementation of the test-and-treat policy among specific populations before the government planned to move to test and treat everyone living with HIV in 2015.

Eight hundred HIV-positive and HIV-negative men who have sex with men and transgender people were enrolled in a study of immediate ART initiation in four provinces in Thailand between 2012 and 2014. The objectives were:

- to determine the uptake of first-time and repeat HIV testing among men who have sex with men and transgender people in community-based and facility-based test-and-treat service delivery models;

- to determine the uptake of early CD4 count testing and ART initiation through community-based and facility-based service delivery models;
- to study the costing of community-based and facility-based service delivery models; to evaluate the use of outreach strategies to increase uptake of HIV testing and access to early care and treatment;
- to understand the facilitators and barriers to accessing HIV testing and ART among men who have sex with men and transgender people; and
- to assess adherence to ART and retention in programmes.

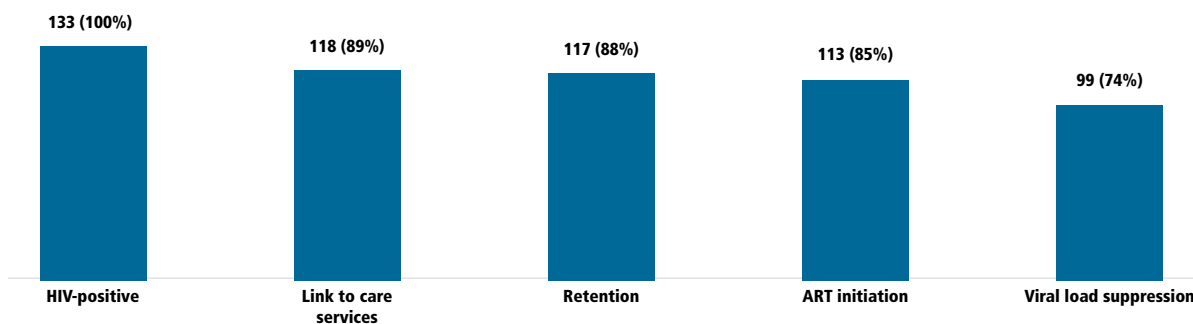
The HIV-related treatment outcomes are reported only for HIV-positive participants ( $n = 133$ ) (41).

## Programme implementation and results

Acceptance of immediate treatment was high at 82%, and 17% had a pre-treatment CD4 count  $>500$  cells/mm<sup>3</sup> (41,42). Retention was 96% at six months and 92% at 12 months, and viral load suppression was 87% at six months ( $n = 137$ ) and 96% at 12

months ( $n = 118$ ) (43). The study will continue until 2016, with plans to enrol 8000 men who have sex with men and transgender people. People living with HIV will be offered immediate ART, and HIV-negative people at risk of acquiring HIV will be given PrEP (Fig. 6).

**Fig. 6. 12-month cascade of care in a study of men who have sex with men and transgender people study in Thailand**



Source: N. Phanuphak and Thai Red Cross. Slides from presentation, May 2015.



## Challenges and lessons learned

Early ART is feasible and acceptable among men who have sex with men and transgender people in Thailand. The lessons learned from these studies will provide valuable implementation and operational guidance as Thailand embarks on a national programme for treating all. PrEP has also been recommended in Thailand's national guidelines since 2014. A total of 2000

facility-based and 6000 community-based ARV delivery sites are participating in an ongoing study about delivery models of treatment, prevention and care based on ART; these models will be costed and assessed for feasibility and acceptability. Findings from this ongoing research will help to guide new approaches and recommendations for taking all new recommendations to scale.

# UGANDA – TREATING ALL CHILDREN LIVING WITH HIV YOUNGER THAN 15 YEARS OF AGE

ART coverage among children has consistently been around half that for adults in low- and middle-income countries: 32% of children versus 41% of adults in 2014 (18). The WHO 2013 consolidated ARV guidelines recommended treating all children living with HIV younger than five years of age regardless of immune and clinical status because of the expected programmatic benefits of removing barriers to initiating ART among children with the goal of narrowing the

treatment coverage gap between adults and children (1). In 2014, Uganda implemented a policy of treating all children younger than 15 years regardless of immune or clinical status (43). The principles guiding the policy change were the benefits to children living with HIV, promoting efficiency, simplicity and decentralization by removing programmatic barriers to initiating ART and increasing treatment coverage among children and adolescents (43).

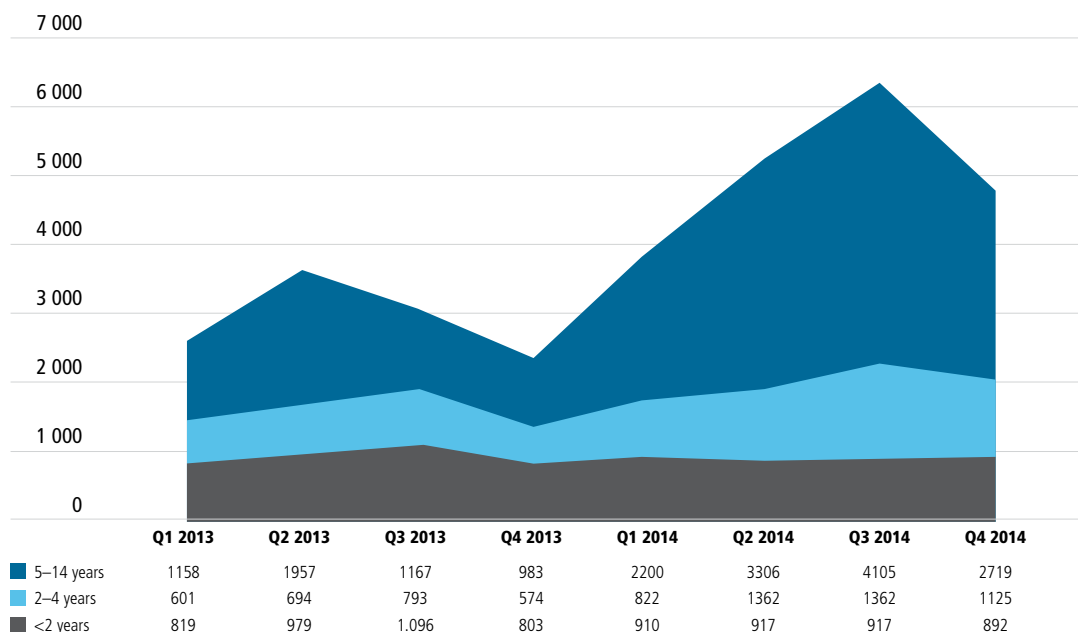
## Programme implementation and results

In May 2015, a rapid assessment was conducted by the Uganda Ministry of Health STD/AIDS Control Programme and WHO with support from the Uganda National Paediatric ART Subcommittee, Makerere University, the United States President's Emergency Plan for AIDS Relief through the United States Centers for Disease Control and Prevention, the United States Agency for International Development, UNICEF, implementing partners and health facility staff. The assessment was conducted through national document review and review of patient-level data from 160 health facilities.

The rapid assessment concluded that the change in policy resulted in

a 74% increase in the number of children newly initiating ART, which was greater among children and adolescents 5–14 years old (Fig. 7) and led to an overall increase in ART coverage among children (from 22% in 2013 to 32% in December 2014). The proportion of children receiving ART in public health facilities also increased from 42% in 2013 to 46% in 2014, and the proportion newly initiating at these facilities increased from 51% to 57%, suggesting that the policy change enabled task shifting and decentralization. In addition, treatment was also more rapidly initiated, and 75% of children and adolescents were reported to start ART within two days of enrolment into care (Fig. 7).

**Fig. 7. Number of children newly initiating ART by age group in Uganda**



Twelve-month retention rates before and after the policy change was implemented were similar, and retention appeared to be better among the children who were healthy and not

immunosuppressed; viral load among the limited number of children with access to viral load testing was encouraging at 84% (43) (Table 4).

**Table 4. Select programme indicators for Uganda, 2014 and 2015**

Indicator	May 2014	May 2015
Children newly initiating ART	11 624	20 262 (73% increase)
ART coverage for children	22%	32% (58 884 children receiving ART)
6-month retention	78%	75% ( $P = 0.20$ )
12-month retention	87%	86%
6-month viral suppression		84% ( $n = 793$ )

## Challenges and lessons learned

The estimated cost for scaling up ART for all children living with HIV younger than 15 years was US\$ 32 million, which was US\$ 6 million more than the cost for treating everyone living with HIV younger than five years. Supply instability and funding unpredictability were considered to be the greatest challenges faced, resulting in temporary stock-out of first-line ARV drugs for children and in concerns regarding the sustainability of the policy change. However, the rapid assessment concluded that treating all children living with HIV younger than 15 years of age is feasible and that careful planning, training health-care workers and adopting strategies to improve retention are critical to successful implementation.

Overall, these five country examples demonstrate that scaling up a treat-all policy, across several diverse populations (adults, key populations and children) is acceptable, feasible and comparable in the short term to initiation based on the eligibility criteria in the WHO 2013 consolidated guidelines. This approach may be cost-effective in the long term but requires an initial additional investment to reach more people, planning to avoid stock-outs and the development of flexible monitoring systems to capture the challenges and take remedial action for notable challenges or poor performance. Long-term follow-up will be necessary along with innovative approaches to support adherence and retention for the many years of treatment over a lifetime.

# NEW GUIDELINES: WHAT IS EXPECTED TO BE DISCUSSED IN THE 2015 UPDATE OF THE WHO CONSOLIDATED ARV GUIDELINES?

WHO is revising the 2013 *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach (1)*. The 2015 guidelines will update clinical and service delivery recommendations based on new scientific evidence and programmatic experience. In addition to the new directions towards expanding ART access to all people living with HIV and broader use of PrEP, the 2015 consolidated ARV guidelines will make new clinical recommendations on preferred ARV drugs and regimens, new testing strategies for infants,

the increasing role of viral load and the appropriate use of CD4 testing. Service delivery recommendations will focus on interventions to reduce losses along the cascade of HIV services from testing to viral suppression and the role of community-based models of ART delivery. The guidelines will also incorporate recommendations from other recent guidelines published by WHO, including those related to skin and oral opportunistic infections, cryptococcal disease, co-trimoxazole preventive therapy, hepatitis B and C infection and key populations.

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