*Araştırma / Research Article*

# HİV ve AIDS için tıbbi araç gereç eksikliği: kenya'da kaynak ihtiyaçlarının belirlenmesi ve unaıds'in antiretroviral ilaçların artmasına yönelik 90-90-90 hedefleri

## HIV and AIDs Commodity Gap: An Estimate of resource needs and envelop under the UNAIDs 90-90-90 targets towards ART scale up in Kenya

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## ÖZET

**Giriş:** Kenya UNAIDS'in 2019 için koyduğu 90-90-90 hedeflerine ulaşmakta oldukça kararlı. Bu hedeflere ulaşmak için Haziran 2015'de 871 000 olan antiretroviral ilaç kullanan hasta sayısının Haziran 2019'da 1.4 milyona ulaşması gerekiyor. Bu da, bu hedeflerin ulaşılabilmesi için oldukça önemli olan antiretroviraller (ARV), hızlı test kitleri, laboratuvar araç gereçleri (virüs yükü, erken tanı ve CD4) gibi tıbbi araç gereçlere ve hassas sağlık sistemlerine gösterilen rağbetin artacağı anlamına geliyor. Kenya'nın geçmişti HIV konusunda ciddi kaynak sıkıntıları yaşadığı düşünülürse, DSÖ'nün mevcut yönergelerine ne kadar bağlı kalırlarsa bu sıkıntıların giderilebileceği ve hedeflerine ulaşabilecekleri net değil. **Yöntem:** Maliyetleme Yaklaşımı, HIV'in demografik görülme sıklığı verilerini elde ederek HIV Kaynak İhtiyaçları Planlama ve Boşluk Analizi modeline (HRNMG) dahil etmeyi, plana yapılacak farklı müdahalelerin hedeflerinin belirlenmesini ve bunları yönergede belirtilen tarihlere göre modele eklemeyi, modele eklenecek farklı işlemlerin birim maliyetinin hesaplanmasını ve toplanmasını ve son olarak da bunları da modele eklemeyi içermiştir. ARV için gereken mali ihtiyaç 2015-2016 mali yılında 168 milyon dolardır ve 2018-2019 mali yılında bu rakam 305 milyon dolara yükselecektir. ARV konusunda 2015-2016 mali yılında 23 milyon dolar olan kaynak açıklığı, 2018-2019 yılında 160 milyon dolara yükselecektir. **Sonuç ve Öneriler:** Birinci ve ikinci 90-90-90 hedeflerine ulaşılması test kitlerinde, ARV'de ve hasta görüntülemede kullanılan laboratuvar araç gereçlerinde artış olmasını gerektirecektir. Tahmin edilen kaynak ihtiyaçlarında bir düşüş görülmemiştir. Bu nedenle 90-90-90 hedeflerinin gerçekleştirilebilmesi için devletin ve diğer hisse sahiplerinin kaynak sürdürülebilirliği seçenekleri üzerinde daha çok durması gerekmektedir. Bu konuda, HIV araç gereçleri için kaynak açıklığının kapatılması ve HIV'e karşı yapılan bu çalışmaların daha sürdürülebilir bir hale getirilmesi için yurtiçi kaynakların harekete geçirilmesiyle gereken kaynakların elde edilmesi bir seçenek olabilir. Kenya aynı zamanda mevcut DTÖ anlaşmalarının ticarete ilişkin Fikri Mülkiyet Haklarının esnekliğinde değişiklik yapılmasını sağlayarak antiretroviral ilaç fiyatlarını düşürmek için anlaşmalar imzalayabilir.

## ABSTRACT

**Introduction:** Kenya has committed to reaching UNAIDS' ambitious 90-90-90 targets by 2019. Attainment of these goals will require increasing the number of patients on ART from the current 871,000 (as of June 2015) to 1.4 million by June 2019. This will translate to increased demand for commodities (Antiretroviral [ARVs], rapid test kits, lab commodities [viral load, early detection, and CD4]) and a highly responsive health system that are essential for the realization of these targets. Given that in the past Kenya has had significant HIV Resource gap, it not clear how adherence to the current WHO guideline will affect this gap together with targets sustainability. **Methodology and Results:** The costing approach involved obtaining and inputting demographic, HIV prevalence data into the HIV Resource Needs, Map and Gap model (HRNMG), obtaining the targets for the different interventions in the plan and inputting them in the model based on the guideline cut-offs, collecting and estimating unit costs of different activities for input into the model and finally inputting the financial data into model. The total financial requirement for ARVs is US$168 million in FY 2015/16, and rises to US$305 million in FY 2018/19. The resource gap for ARVs increases from US$23 million in FY 2015/16 to US$160 million in FY 2018/19. **Conclusion and Recommendation:** The achievement of the first and second 90-90-90 targets will require an increase in the number of test kits, ARVs, and laboratory commodities used for patient monitoring. The estimated resource needs has not shown any reduction in the future which suggests that realization of the 90-90-90 targets requires a major refocus on resource sustainability options by both government and other stake holders. One such option would be to obtain the required resources through Domestic Resource Mobilization (DRM) to bridge the resource gap for HIV commodities and place the HIV response on a more sustainable path. Kenya would also uphold agreements that would call for a lower cost of ARTs drugs through pushing for changes in the current WTO agreements on Trade-Related Aspect of Intellectual Property Rights (TRIPS) flexibilities.

## INTRODUCTION

The Kenya AIDS Strategic Framework 2014/15–2018/19 (KASF) is the overarching strategic document guiding the HIV response in Kenya's devolved system of governance. The implementation of KASF goals will contribute to the achievement of Vision 2030 targets by ensuring universal access to comprehensive HIV prevention, treatment, and care (see Ministry of Health (MOH), 2014). Kenya has also committed to reaching

UNAIDS' ambitious 90-90-90 targets by 2019. These targets call for 90 percent of all people living with HIV (PLHIV) to know their status, 90 percent of those diagnosed to be on antiretroviral therapy (ART), and 90 percent of people on ART to be virally suppressed (MOH, 2014 and Government of Kenya (GOK), 2013). Although these goals could be realized under the current guidelines, or under a test-and-treat approach, it is paramount that reaching these goals in the context of current funding constraints will require three targeted interventions.

First, Identification of the 90 per cent of the total HIV population which implies intensifying scale-up of innovative testing strategies for targeted groups as an entry point to maximizing the identification of HIV-positive persons while minimizing the number of tests conducted. Second, Treatment of the 90 per cent of the identified which implies access to ART for 81 percent of HIV-positive persons (90% identified, and 90% initiated to ART treatment from the point-of-diagnosis) and Third, Suppression of HIV to the 90 percent of the treated. This implies targeted support for adherence and retention in the first 12 months of ART, and access to viral load monitoring for measurement of CD4 count.

Attainment of these goals will require increasing the number of patients on ART from the current 871,000 (as of June 2015) to 1.4 million[1] by June 2019. This will translate to increased demand for commodities (antiretroviral [ARVs], rapid test kits, lab commodities [viral load, early detection, and CD4]) that are essential for the realization of these targets. Since commodities are the key cost drivers in HIV programming, it is critical to estimate their costs and any resulting financial gaps to guide policy discussions on scaling up for achievement of 90-90-90 targets by FY 2018/19.

Specifically the achievement of the first and second 90-90-90 targets will require an increase in the number of test kits, ARVs, and laboratory commodities used for patient monitoring. Since the second 90 is already defined as 81 percent of PLHIV on ART, patient targets are not only based on country eligibility guidelines, but also on the number of PLHIV. Thus, the number of patients requiring ART at 90-90-90 is 1.4 million. If Kenya moves to test-and-treat then achievement of the second 90 is more assured, as more people will be initiated in ART per year.

The only factor that will vary is the mix of patients by CD4. Under test-and-treat, a portion of patients on ART will be those with CD4 >500, while under the

[1] Equal to 81 percent coverage of the 1.742 million persons forecasted to be living with HIV in 2019, based on the 2013 estimates *(released in 2014; see NACC & NASCOP, 2014).*

current guidelines the patients on treatment are those with CD4<500. However, it should be noted that the speed of convergence at the set targets is higher with test-and-treat than under current guidelines, as the number put on treatment will be higher because they are not limited by a CD4 cut-off.

Several resource gaps for HIV programs have been estimated in the past (see MOH, 2015). This brief attempts to harmonize the methodologies used in estimating HIV commodity gaps in the past. To do so, major stakeholders (Clinton Health Access Initiative, National AIDS & STI Control Programme, and National AIDS Control Council) were consulted in arriving at the assumption and targets used in the resource-gap estimation model. In this model, two scenarios are considered: financial needs for key commodities under the current guidelines, and a more ambitious "scale-up" scenario. In addition to harmonizing the way Kenya estimates HIV commodities gaps, the model will also support the mobilization of resources toward attaining the 90-90-90 targets.

## METHODOLOGY AND DATA

### Methodology

The resource requirements estimation was aligned with the Kenyan ART and HTC national guidelines, which specify ART regimens, testing algorithm and strategies. The broad commodity needs considered are ARVs, test kits and laboratory commodities. The estimation of the financial resources to support the implementation was done using HIV Resource Needs, Map and Gap (HRNMG) which in builds Resource Needs Model (RNM). The HRNMG is a modification of RNM to accommodate resource mapping and gaps. The costing approach involved four steps. Step one consisted of obtaining and inputting demographic, HIV prevalence data into the model. The second step involved obtaining the targets for the different interventions in the plan and inputting them in the model based on the guideline cut-offs. The third step consisted of collecting and estimating unit costs of different activities for input into the model. The fourth step involved in putting the financial data into the model.

In the costing analysis, the resource needs are a function of the population in need of the service or intervention, the unit cost of the intervention and the coverage rate. These are estimated on an annual basis and summed across the period to give an indication of the likely costs of providing ART, HTC and laboratory commodities as per the set country targets. The estimated cost per activity was computed by the following formula:

*Cost per activity or service (Ksh) = population x coverage target x unit cost.*

The difference between the estimated resource need and the resource available (available resource envelop) is the resource gap that need to be meant.

## Data

The data used for this analysis contains commodity quantities from the national HIV forecasting and quantification process (MOH and NASCOP, 2015). This quantification was conducted based on a combination of morbidity- and consumption-based methods. The ARV quantities were computed on a consumption basis, while lab commodities were determined from morbidity estimates. Viral load tests were calculated based on population estimates and targeted scale-up by the national program. Finally, HIV testing and counseling (HTC)  estimates included assumptions of progressively reduced testing by the national program by shifting toward more targeted strategies over the next three years (MOH and NASCOP, 2015).

Funding data was collected from several sources, including the Global Fund to Fight AIDS, Tuberculosis and Malaria's grant allocation for Kenya; the Country Operational Plan (COP 15) for PEPFAR; other development partners (through a questionnaire); and the Government of Kenya (from printed and Medium-Term Expenditure Framework estimates).

### Ethical consideration

No ethical committee approval was needed for this study as the data used in this research was obtained from public use data set.

## RESULTS

### Overall Funding Requirements for Commodities (ARVs, labs, and HTC)

The total requirement for HIV commodities for FY 2015/16 is US$200 million and is expected to rise to US$344 million by FY 2018/19, while available funding remains constant at US$174 million through FY 2018/19. This creates a funding gap of US$26 million in FY 2015/16, which is expected to increase to US$170 million by 2018/19 (see Table 1). The main driver of this increase is the rise in total costs for ARVs, driven by an increase of over 45 percent in the number of patients on treatment (871,000 in FY 2014/15 to 1.4 million in FY 2018/19). By FY 2018/19, available funding will be enough to cover only 51 percent of the need for key HIV commodities.

**Table 1.** Estimated Resource Gaps for HIV Commodities (US$ millions)

| Years | 2015/16 | 2016/17 | 2017/18 | 2018/19 |
|---|---|---|---|---|
| **Needs** | $200 | $223 | $313 | $344 |
| **Funding** | $174 | $174 | $174 | $174 |
| **Gap** | $26 | $49 | $139 | $170 |

### Breakdown of Resource Gaps, by HIV Commodity and by Type

### ARVs

As shown in Figure 1, the total requirement for ARVs is US$168 million in FY 2015/16, a number that rises to US$305 million by FY 2018/19. The resource gap for ARVs increases from US$23 million in FY 2015/16 to US$160 million in FY 2018/19.
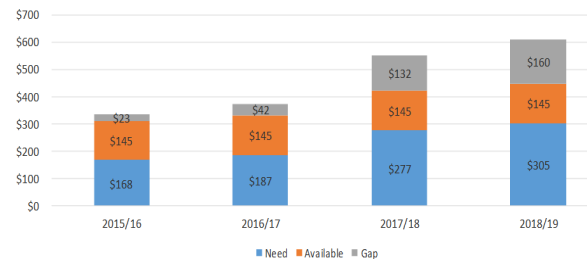


**Figure 1.** Estimated Funding Gap for ARVs (FYs 2015/16–2018/19), in US$ millions

### Testing Kits

The need for HIV testing kits is US$12 million for FY 2015/16, which reduces to US$6 million by FY 2018/19. There is no current gap for testing kits and, with the resources available, the need will be met by FY 2018/19[2] (see Figure 2).
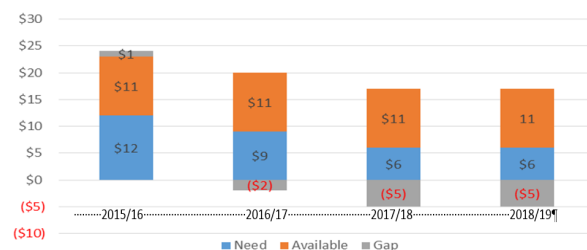


**Figure 2.** Estimated Funding Gap for HTC (FYs 2015/16–2018/19), in US$ millions

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[2]Negative gaps in figure 2, represent surplus as a results of the reduced HIV testing targets brought about by targeted testing.

## Laboratory Commodities

Figure 3 shows resource needs for laboratory commodities at US$20 million for FY 2015/16, a number expected to rise to US$33 million by FY 2018/19—driven by an increase in the number of patients and the need for monitoring tests as Kenya approaches the 90 percent on treatment target. With available resources flattening at US$18 million, the financial gap for laboratory commodities will continue to rise, reaching US$15 million by FY 2018/19.
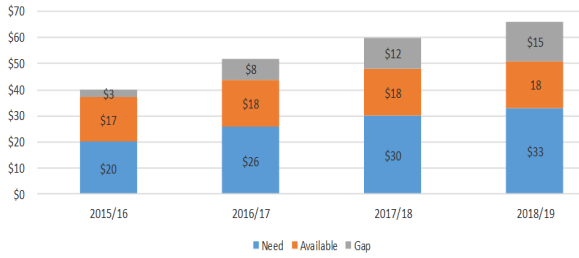


**Figure 3.** Estimated Funding Gap for HIV Lab Commodities (FYs 2015/16–2018/19), in US$ millions

## Feasibility of Reaching 90-90-90 with Current Resource Base

Figure 4 illustrates the trend of resource needs versus resources available for HIV commodities as Kenya progresses toward achievement of 90-90-90 targets. The financial gap is widening. For example by FY 2018/19, Kenya would need a large resource envelop in order to close the gap. Clearly Kenyan government must double its current annual allocation of US$20 million to help close the growing resource gap.
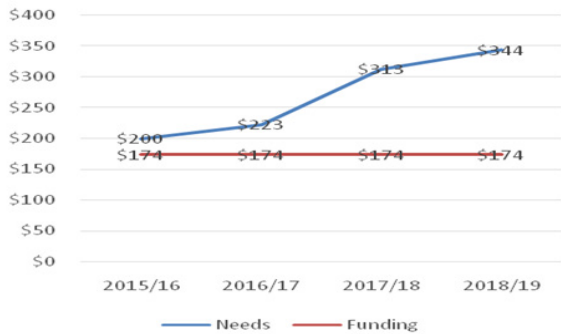


**Figure 4.** Funding Need and Availability for HIV Commodities, in US$ millions

A flattening of external support suggests that any additional resources can only be mobilized domestically. This then implies that the government option remains that of rethinking other avenue of raising domestic resources or engaging in other cost cutting measures that will not jeopardize the current story on the reported declining trend HIV/AIDs prevalence rate. It is expected that with full implementation of the current WHO guidelines the gap is expected to grow even bigger in the short run due to other non-commodity care that goes with increased numbers under treat arrangement. A more clear picture can be predicted when elaborate WHO guidelines cost is ascertained.

## CONCLUSION

The study estimated the HIV commodity need through the period FY 2015/2016 to 2018/2019 with an optimistic assumption of a constant funding over the same period. The estimate shows that by FY2108/2019 the total need will have reached around $350 million from a low of $200million in FY2015/2016. This call for a refocus on the funding option assuming that external resources keep flattening going down in future.

The Key policy option then would be to obtain the required resources through Domestic Resource Mobilization (DRM) to bridge the resource gap for HIV commodities and place the HIV response on a more sustainable path. Other options could include engaging in international trade agreements under the world trade organization that will boost manufacturing of HIV generic drugs in the country with a target of lowering the cost of drugs which has been the key component to the growing HIV funding gap and, coming up with a deliberate long term strategy of engaging the private sector at financing some key area of HIV prevention cost .One such way would be for the government to offer some tax concession to companies engaging in community work that focus on HIV prevention and care.

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