

**Scope of Work (DRAFT)**

**National HIV Allocative Efficiency Analysis in COUNTRY A**

This Scope of Work outlines the aims and specifications for undertaking a national-level HIV allocative efficiency analysis (‘national AE analysis’) in COUNTRY A and related analytical support. This analysis will be conducted as part of a multi-country effort in Eastern Europe and Central Asia.

# I. Overview on the Multi-Country Initiative for Allocative Efficiency Analysis

Today’s HIV responses are faced with the need to scale up prevention and provide ART, care and support to a larger number of eligible people living with HIV than ever before. In the past, HIV responses in many countries around the world have attempted to provide a wide range of services using multiple different approaches and entry points. At a time of increasing resource envelopes, this was useful in order to learn from testing different interventions and delivery modalities, but it also led to fragmentation of responses and thereby limited focus on scaling up the highest-impact programs. In an environment of limited resources, focused HIV response design and efficiency in program delivery are essential to ensure that programs can **do more with less**. A shift towards **investment thinking** in design of HIV responses has been agreed and is promoted by UNAIDS and co-sponsors globally in order to maximize impact and realize the long-term health and economic benefits of HIV programs. Investment cases are currently being developed by a number of countries to **understand** HIV epidemics as well as to **design**, **deliver** and **sustain** effective HIV responses. In support of HIV investment cases, a group of countries in Eastern Europe and Central Asia have decided to conduct allocative efficiency analyses.

The concept of allocative efficiency refers to the **maximization of health outcome with the least costly mix of health interventions**. HIV allocative efficiency studies are generally trying to answer the question “*How can* *HIV funding be optimally allocated to the combination of HIV response interventions that will yield the highest impact in the shortest period of time?”* The HIV allocative efficiency (AE) analysis will be carried out through an application of the Optimization & Analysis Tool (Optima). **Optima** is a mathematical model of HIV transmission and disease progression, which uses an integrated analysis of epidemic, program and cost data to determine an optimal distribution of investment to better serve the needs of HIV and health decision-makers and planners.

In 2014, Allocative Efficiency analysis will be carried out in six countries: Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova and Ukraine. Through different in-country mechanisms such as national working or steering groups, national governments are in the driving seat for the development of investment cases. A collaborative approach will be applied by a group of international agencies to support this process. In its co-ordination role, UNAIDS working with its co-sponsors has facilitated planning of investment case development during a regional consultation. UNAIDS will continue to co-ordinate the technical support to development of HIV investment cases in-country and will support regional and in-country meetings for analysis and sharing of findings of the AE analyses. The World Bank (WB) is the convener around allocative efficiency within the UNAIDS/WB Economics reference group and has been collaborating with the University of New South Wales (UNSW) in developing Optima. The World Bank has contracted UNSW for conducting mathematical modelling analysis in the six countries and will provide overall quality assurance to the data collection and analysis process. The WB will also technically support data collection in Armenia, Moldova and Ukraine. The United Nations Development Programme (UNDP) has previously supported AE analysis in the region and will provide technical support to data collection in Belarus, Kazakhstan and Kyrgyzstan. The Global Fund on AIDS, TB and Malaria as a major funding partner of the response will ensure alignment of the analyses with the policy questions arising from upcoming funding requests and support follow up meetings for decision-makers. UNAIDS, in collaboration with its co-sponsors, will facilitate continued technical support in translating findings of this analysis into policy and national programs.

UNAIDS will also co-ordinate the technical support to development of Investment Cases at regional level. For the 6 studies envisaged in the ECA region, a working group on AE analysis convened by the World Bank and involving all the above-mentioned agencies has been set up for planning the provision of technical support and will facilitate sharing of experiences between countries. For this purpose, it is also planned to hold one joint regional modelling and data analysis workshop.

*In order to define the six country analyses, it is proposed to prepare a Scope of Work (SoW) document for each country.* ***This document will outline the specific policy questions each country would like to be answered and translate them into an agreed set of analyses.*** *A standard template for the Scope of Work is being offered in the following sections. Countries are encouraged to review it and tailor-make it according to their needs.*

# II. Rationale and Overall Direction of AE Analysis in Country A

The World Bank and partners will collaborate with COUNTRY A in conducting AE analysis, which will involve mathematical modelling and provision of up-to-date analytics about the future of HIV response and financing for it in COUNTRY A.

COUNTRY A has set the priorities for its HIV response in the National Strategic Plan (NSP) including key impact targets:

* *INSERT IMPACT TARGETS HERE*

In addition a number of coverage targets were set. Given the limited resources available, additional prioritization based on in-depth AE analysis is required to redefine program coverage targets for maximum impact with different scenarios of resource availability, and to support further operational planning and budgeting.

In this context, the Government of COUNTRY A is developing HIV investment analyses, in which it attempts to increase effectiveness of HIV investments and define corresponding priorities, strategies and impacts of the response, as well as determine the future sources of HIV financing and how to most effectively allocate the resources to be provided by the Global Fund. The analysis will be conducted in close collaboration with Government, ideally as part of the efforts of an in-country inter-sectorial working group on improving HIV investments in COUNTRY A.

The national-level HIV allocative efficiency study is proposed to answer the following main questions *(see next section for detailed questions)*:

1. **How can the country optimize the allocation of HIV funding for maximum health impacts?**
2. **How much does it cost to achieve the targets of the National HIV Strategy and long-term international commitments towards HIV goals?**
3. **What is the return on investment of optimized allocations for HIV?**
4. **What are the health and financial impacts of implementing different ART guidelines?**
5. **What are the long-term financial commitments for HIV services for PLHIV?**

In order to answer these five groups of policy questions, the WB-UNSW team will conduct a mathematical modelling analysis using the Optima tool.

# III. Focus of National AE Analysis

In line with the five groups of questions outlined above, the National AE Analysis will consist of five inter-related sets of analyses. Although the five analyses tackle five different policy dimensions, they are closely linked to each other (eg changes in ART eligibility will impact on long-term cost, savings and impacts). These linkages will be made explicit in the report on the national AE analysis.

## III.1. Analysis 1: How can the country optimize the allocation of HIV funding for maximum health impacts?

The first analysis to be conducted in this study will be an epidemiological projection and comparison of outcomes with current and optimised allocation of resources. The focus will be to determine how the country can best allocate the available and anticipated domestic and international HIV resources to achieve maximum HIV response impact (HIV infections and deaths averted)? This will entail the following specific questions:

1. What will the annual levels of incidence, prevalence, and deaths be under:

* Current funding volume (2012 or 2013 expenditure), **allocated to different programs   
  as per the allocations in 2012 or 2013** (most recent year with spending data);
* Current funding volume (2012 or 2013 expenditure), **allocated optimally** to   
  (i) minimize cumulative new HIV infections between 2014 and 2030, and   
  (ii) minimize cumulative deaths between 2014 and 2030  
  (iii) get as close as possible to multiple objectives:
  + *Minimize HIV incidence*
  + *Minimize HIV-related deaths*

1. What are the levels of program coverage corresponding to the optimal allocations as outlined   
   under a.
2. What are the optimal allocations to programs for a total budget ranging from 0% to 200% of  
   the current spending (2012 or 2013 actual annual expenditure) to

i) minimize cumulative new HIV infections between 2014 and 2030, and   
(ii) minimize cumulative deaths between 2014 and 2030  
(iii) get as close as possible to multiple objectives:

* *Minimize HIV incidence*
* *Minimize HIV-related deaths?*

In any of the above analyses certain constraints could be introduced in the specific country context. These are minimum requirements for specific programs that cannot be avoided. The only general constraint that is proposed for this national AE analysis is the following:

* Current patients on ART cannot be taken off ART and therefore ART coverage cannot go below coverage required for retaining current patients (but no new ART patients need to be added unless determined by optimisation).

## III.2. Analysis 2: How much does it cost to achieve the targets of the National HIV Strategy?

The second analysis will be based on Analysis 1and identify resource requirements under a rights-based approach and for existing country commitments. The main purpose of this analysis is to determine the minimum requirements for achieving national strategy targets and long-term international commitments. Thereby this analysis will also establish the gap in funding required to achieve these targets. The following questions will be addressed:

1. What is the minimal spending to fully achieve COUNTRY A’s National Strategy impact targets, and how should such funds be allocated?
2. How much would it cost to achieve the global vision (to reduce new HIV infections and AIDS related deaths by 90 % by 2030 against 2010 as a baseline) in COUNTRY A? This analysis may be adjusted and alternative scenarios to the 90 % reduction in incidence and deaths by 2030 considered in-country.

Note: The difference to Analysis 1 is that Analysis 1 starts from given amounts of money available and then explores optimal allocation. Analysis 2 will aim for full achievement of impact targets and determine the minimum amount required for that.

## III.3. Analysis 3: What is the return on investment of optimized allocations for HIV?

The third analysis will tackle the question of return on investment and implied cost-effectiveness. This analysis will focus on two questions:

1. What are the financial savings up to 2030 for different allocative choices?
   * Current level of spending, not optimized (as per most recent year with expenditure data/NASA)
   * Current level of spending, optimized (as per Analysis 1)
   * Allocation to achieve national targets, optimised (as per Analysis 2.a.)
2. What are the costs per HIV infection or death averted per HIV program with different allocative  
   choices?

## III.4. What are the health and financial impacts of implementing different ART guidelines?

Given the major effects of ART on survival and MTCT, effects on sexual transmission and on transmission among PWID, changes in ART eligibility could have substantial impact on the course of COUNTRY A’s HIV epidemic. Therefore it will be relevant to study the effect of different ART eligibility criteria on epidemiological outcomes. Three ART eligibility scenarios will be explored:

* ART eligibility of PLHIV with CD4<350
* ART eligibility of PLHIV with CD4<500
* Test & treat approach for key populations: The globally proposed definition was to test 90 % of all PLHIV, retain 90 % of PLHIV diagnosed on ART (ie 81 % of all PLHIV) and achieve viral suppression among 90 % of all PLHIV retained on ART (ie 73 % of all PLHIV)). The definition of the test and treat approach will be refined for specific populations. In concentrated epidemics, the 90 % HTC/ART targets for the PLHIV in the general population and some key populations like PWID will not be realistic and revised downwards. The following parameters may be used for a test and treat approach with a 2020 horizon:

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of PLHIV** | **Diagnosed** | **Retained on ART** | **Virally surpressed** |
| FSW, MSM | 90 % | 90 % (81 % of all) | 90 % (73 % of all) |
| PWID & partners, SW clients | 80 % | 90 % (72 % of all) | 90 % (65 % of all) |
| General population | 70 % | 90 % (63 % of all) | 90 % (57 % of all) |

Two main questions will be addressed in Analysis 4:

1. What would be the impact of different ART eligibility scenarios on new infections and deaths?
2. What would be the immediate cost increases and medium- to long-term financial implications of these approaches?
   * Current allocation (as per most recent year with expenditure data/NASA)
   * Optimised allocation to achieve multiple objective (see 1.a.(iii))

## III.5. What are the long-term financial commitments for HIV services for PLHIV?

The fifth analysis will take a long-term perspective with a 2050 horizon and look at the impact of current investment choices on long-term financial commitments. This will address the following two questions:

1. What are the different spending commitments towards all PLHIV alive today?
2. What are the new spending commitments caused by new HIV infections occurring in a given period for different allocation scenarios?
   * Current allocation (as per most recent year with expenditure data/NASA)
   * Optimised allocation to achieve multiple objective (see 1.a.(iii))
3. Where will these resources come from, and what is the public debt implication for the Government?

# IV. Process requirements and other specifications for National AE Analysis

In order to conduct the five analyses outlined above, specific process, data and other requirements need to be defined (which apply across all four analyses):

## IV.1. Data requirements

The World Bank team will populate a preliminary Optima data matrix based on a comprehensive set of validated and preliminary data including

* Population-size estimates
* HIV and STI prevalence
* HTC, ART and PMTCT coverage
* Sexual and injecting behaviour data
* Population transitions
* Economics, spending and cost information
* Unit cost data
* Technical efficiency data and estimates of cost savings by service delivery model

The preliminary draft of the Optima matrix can build on already published reports and the 2014 country’s Global AIDS Progress Report (GARPR). During an in-country mission or via electronic exchanges, data inputs will be refined considering some of the following types of information:

* Contextual epidemiological information on differences in HIV prevalence between different groups and geographical areas;
* Contextual information on population size estimates (eg. generalizability of size estimates from specific sites);
* Unit cost data in specific program and service delivery areas;
* Additional data on program roll-out;
* The projected costs of enablers and synergies and whether they are covered by the HIV budget (governance, management/coordination, strategic information, policy, safe blood, medical waste, impact mitigation, etc.);
* Contextual information on sexual and drug injecting behaviors as well as population mixing to refine model assumptions in these areas;
* Information on acquired and likely HIV financing (all sources) in the national strategic plan period and beyond

## IV.2. Modelling specifications

1. **Populations to simulate epidemic outcomes**

* It is proposed to distinguish up to 14 sub-populations which overall comprise the entire population of COUNTRY A. Key groups will include (other groups may be added as needed):
  + Children 0-14
  + Females 15-49
  + Males 15-49
  + Females 50+
  + Males 50+
  + Female sex workers (FSW)
  + Clients of FSW (CSW)
  + Men having sex with men (MSM)
  + Women who inject drugs (WWID)
  + Men who inject drugs (MWID)
* The annual UN population estimates or national census data will be used for population size and age/sex structure.
* The sizes of key populations (people who inject drugs (PWID), sex workers (SW), sex worker clients (SWC) and men having sex with men (MSM) will be derived from in-country data.
* The feasibility of including migrants and prisoners will be further explored.

1. **Timeframes of interest**

It is proposed to assess spending impacts for the following selected years:

* 201x (Government’s timeline -- end of national strategy);
* 2030 (new UNAIDS horizon for ending AIDS)

1. **HIV programs to be compared in the Optima model for all 4 analyses**

The following program categories are proposed to be included in the Optima analysis.

* Needle and Syringe Exchange Programmes (NESP) for People Who Inject Drugs (PWID)
* Opioid Substitution Therapy for PWID
* Targeted prevention services for MSM (incl. condoms, HCT)
* Targeted prevention services for FSW (incl. condoms, HCT)
* Targeted prevention services for higher-risk men/”sex work clients” incl. condoms, HTC
* Prevention for the general population (condoms and BCC-type activities for students and other groups in the general population in line with the national strategy
* PMTCT
* HIV testing and counselling for the general population
* ART services (incl. clinical/biological monitoring, nutritional supplements, etc. as per guidelines)
* Care and support services

We would like to present annual allocations for each of the above basic programs and map them to the national program categories. Non-program costs – also called enablers and synergies - will NOT be optimized (as they don’t have measurable epidemic impact) but be fixed at agreed amounts. For instance, they can be set to increase at an annual percentage which combines population inflation and currency inflation.

1. **Relationship between investment and effect (cost-outcome curves)**

For the optimization function, the following type of table (matrix will be provided) should be filled in to establish the investment-outcome curves):

Note: This relates to unit cost estimations and available data on unit costs should be used here.

| **Basic program** | **Target population** | **Spending: actual/zero/ max** | **Coverage (output)** | **Outcome** |
| --- | --- | --- | --- | --- |
| **If X amount of USD … →** | **… then coverage Y →** | **… and outcome Z** |
| *Example:*  ART services | Eligible PLHIV | Actual 2013: USD … | Number tested /number on ART in 2013 | % of all PLHIV on ART in 2013 |
| No public sector investment (USD 0) | Hypothetical number tested per year /on ART (by private sector provision only) | % of all PLHIV on ART (minimum scenario if no public investment) |
| Spending required to reach the maximum achievable coverage (USD ….) | Number tested per year / on ART (maximum achievable number) | % of all PLHIV on ART (e.g 90 %, maxímum scenario) |
| *Example:*  Prevention package for FSW | Estimated number of FSW | Actual 2013: USD … | Estimated coverage (number of SW reached; number of condoms distributed) | Reported condom use at last act with client |
| No public sector investment (USD 0) | Estimated number of SW buying condoms; number of condoms sold to FSW (if condoms were sold in private sector only) | Hypothetical condom use at last act with client (minimum scenario if no public investment) |
| Spending required *with basic technical efficiency* to reach the maximum achievable coverage*:* (USD ….) | Hypothetical coverage (number of SW reached; number of condoms distributed) | Hypothetical condom use last act with client (maximum investment, basic technical efficiency) |
| Spending required *with high technical efficiency* to reach the maximum achievable | Hypothetical coverage (number of SW reached; number of condoms distributed) | Hypothetical condom use last act with client (maximum investment, high technical efficiency) |

## IV.3. Partnership

This study will be conducted in the context of a partnership between several national and international partners (see section I.). In the specific country context, the following division of labor is envisaged (please adjust as needed):

* **National AIDS Co-ordinating Body:** convene national working group on investment case and/or study group on AE analysis, define policy questions and analyses (through finalizing this Scope of Work), participate in AE analysis and facilitate review of report.
* **Ministry of Health:** participate in national working group, provide HIV routine service data and review study report.
* **Ministry of Finance:** participate in national working group, validate economic data and review study report.
* **In-country data team/consultants:** provide timely draft data matrices by the agreed three deadlines and incorporate comments from in-country and international partners as required.
* **UNAIDS/UNCT:** facilitate in-country meetings and co-ordinate communication between partners, logistic and funding support to participation of in-country experts in regional workshop, provide in-country technical support.
* **UNDP regional team** (Belarus, Kazakhstan, Kyrgyzstan), **World Bank** (Armenia, Moldova, Ukraine): technically support data collection and report writing by in-country team.
* **World Bank:** technically support design of analysis (Scope of Work), fund UNSW modelling work, and provide quality assurance to data matrices and study reports.
* **University of New South Wales:** conduct mathematical modelling including calibration of the epidemic model, cost-coverage-outcome relations and optimisation analyses.
* **Global Fund**: facilitate alignment of Scope of Work and study products with policy questions arising from upcoming funding decisions, support dissemination and utilization of findings.

## IV.4. Timeline and deliverables

The following time frame is proposed for the analytical support to COUNTRY A:

1. Teleconference on Scope of Work and data entry matrix (by 29 August);
2. Provision of a zero draft COUNTRY A Optima matrix for quality assurance: (by 1 September)
3. In-country mission for stakeholder involvement, engagement and data review (tbd)
4. Provision of a first draft COUNTRY A Optima matrix and investment-outcome curves for quality assurance (by 15 September);
5. Provision of a final draft COUNTRY A Optima matrix and investment-outcome curves for quality assurance : (by 30 September);
6. Optima model calibration and preliminary draft outputs (UNSW): 22 October;
7. Participation in regional modelling and report writing workshop (early November);
8. Draft allocative efficiency analysis report available: by 7 November;
9. Team review (all) by 14 November;
10. Revise Optima outputs (UNSW): by 21 November;
11. Revision and updating of allocative efficiency analysis report (UNSW): by 28 November;
12. Feedback on revised report – 5 December 2014;
13. Consolidating the final report by 15 December 2014.

Once this Scope of Work document is agreed, the dates are considered firm and team members will rely on timely availability of each interim deliverable, as per the above schedule.