

REFERENCE GUIDE FOR CONSIDERING
STUDY TYPES, METHODS AND TOOLS FOR

HIV ECONOMIC QUESTIONS

G:GENESIS
UNLOCKING VALUE

CONTENTS

1 | [Introduction](#)

2 | [The National Resource Planning Cycle](#)

[Stage 1. Policy, Planning and Prioritisation](#)

[Stage 2. Operational and Budget Planning](#)

[Stage 3. Execute Budget & Routine Monitoring](#)

[Stage 4. Evidence and Evaluation](#)

3 | [Further guidance for planning your costing or RMET study](#)

4 | [Annexures](#)

[Annexure 1: List of tool reviews in online repository](#)

[Annexure 2: Common health economics terminology](#)

Navigation Guide

Click on the Headings on the Contents Page to navigate to the desired Sub-Section.

To navigate the rest of the document, follow the **Navigation Prompts** (where provided) included in the Navigation Guide box, like this one.

Also, make use of the **Navigation Bar options**, along with the < and > arrows.

Underlined Text is linked to content elsewhere in the Guide or online sources.

Please Note

This document has been designed to be used as an electronic guide and best viewed in full screen mode. Several interactive links are built into the document. Should it be printed, a view on the interactive links will be lost resulting in an incoherent flow and structure for the printed version. This is also a large document and printing thereof will result in an unnecessary waste of paper.

ACRONYMS

ABC/M	Activity Based Costing for Management	NGOs	Non-Governmental Organisation
BMGF	Bill and Melinda Gates Foundation	NHA	National Health Accounting
CORRT	Country Owned Real Time Resource Tracking	NSP	National Strategic Plan
CSO	Civil Society Organizations	PEPFAR	US President's Emergency Plan for AIDS Relief
FMIS	Financial Management Information System	PFM	Public Financial Management
GAAP	Generally Accepted Accounting Principles	PHC	Primary Health Care
GF	The Global Fund	RM	Resource Mapping
GFF	Global Financing Facility	TDABC	Time Driven Activity Based Costing
GHCC	Global Health Costing Consortium	UHC	Universal Health Coverage
IC	Investment Case	UNAIDS	Joint United Nations Program on HIV/AIDS
JLN	Joint Learning Network	USAID	United States Agency for Economic Development
MOF	Ministry of Health	USG	United States Government
MOH	Ministry of Finance	WB	World Bank
MSH	Management Sciences for Health	WHO	World Health Organisation
M&CTs	Management and Costing Tools		

INTRODUCTION

Over the last decade there has been increased international interest in resources mapping, expenditure tracking and costing studies for HIV and primary health care services, as part of the drive towards value for money and greater domestic responsibility for financing HIV programmes. Results from these initiatives have provided policy makers, program managers and other financial planning bodies, within partner organisations and government, with the ability to forecast the cost of an intervention, estimate the total resource requirement of the HIV response, monitor allocative efficiency, trace funds from source through to beneficiary and track actual expenditure incurred in the provision of services. These efforts have resulted in the proliferation of related costing tools alongside the refined implementation of existing large-scale resource mapping and expenditure tracking exercises and the development of methodologies for big-data manipulation and analysis.

A recent landscaping of existing methodologies and tools, specifically for HIV interventions and primary health care services, revealed that there are more than fifty different methodologies and tools which can be used to generate information about either HIV financing, costs or expenditure.

The wide array of study types, methods and tools for costing, resource mapping and expenditure tracking has left policy makers, managers and planners, many of whom are not costing and economic experts, burdened with the need to choose the most appropriate approach, method or tool to answer their economic questions for HIV programmes.

The purpose of this reference document is to provide the user with an organised and concise overview of study types, research protocols, methodologies and tools for common HIV research questions under each stage of a typical national or sub-national resource planning cycle. By providing a birds-eye view of these different methods and tools available to answer economic questions, the document is a useful reference guide for planners, policy makers, officials, health programme managers and advocacy organisations, who have responsibilities in the field of economic decision making.

This reference guide is a companion to the more comprehensive report, *Guidance for Selecting Methods and Tools for HIV Economic Studies*. The comprehensive report guides the user along stepwise pathways to selecting the most appropriate methods and tools for HIV economic studies and provides more detailed explanations and use cases than this document. If readers of this reference guide need further explanations and guidance in making their selections, they should refer to the comprehensive report.

THE NATIONAL RESOURCE PLANNING CYCLE

To respond to the design objective of creating a well-organised and structured reference document, the authors have structured the economic questions, study types and tools along the stages of a typical planning cycle, enabling country level planners to orientate the study questions and tools in the guide to their own cycles and processes. The list below shows the cycle being organised into 4 stages:



STAGE 1

Policy, Planning
& Prioritization

STAGE 1: Policy Planning and Prioritisation, uses evidence from the evidence and evaluation stage (Stage 4) to assess whether previous policies and guidelines resulted in the achievement of strategic objectives and health outcomes and remain relevant within the latest socio-economic and political context. Based on this review, policy makers create a revised policy framework which sets out overall objectives, key priorities and guidelines and establishes and allocates resource envelopes to high-level strategic areas.



STAGE 2

Operational &
Budget Planning

STAGE 2: Operational and Budget Planning, determines how total available resources should be rationed or apportioned to programs or result areas. This stage involves translating strategic plans and policy priorities into operational programmes and sub-programmes and allocates funding according to different approaches, such as baseline budgeting, zero based budgeting or results-based budgeting.



STAGE 3

Execute Budget &
Routine Monitoring

STAGE 3: Budget Execution and Routine Monitoring, provides for monitoring financial and programmatic performance by management and oversight forums through analysing routine data from management information systems and short-term corrective actions may be executed as part of an adaptive-management system.



STAGE 4

Evidence &
Evaluation

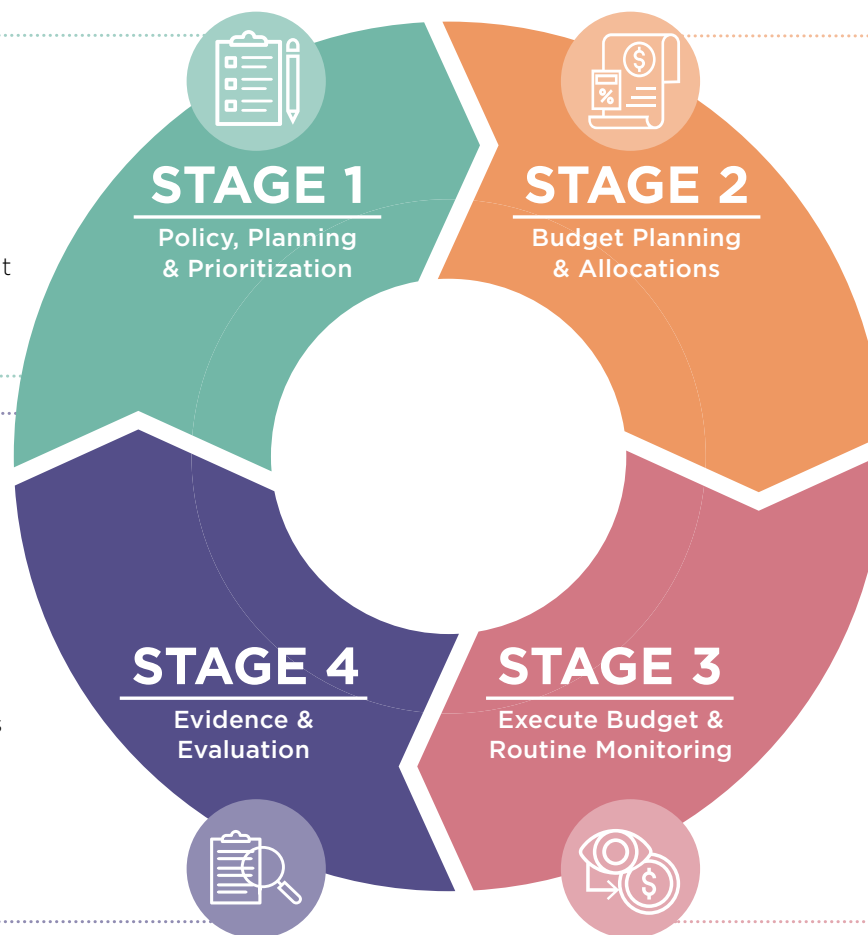
STAGE 4: Evidence and Evaluation, the final stage of the planning cycle involves the evaluation of policies, implemented programs and interventions and how finances were allocated and spent. This stage includes program reviews, evaluations and retrospective cost analysis studies including cost effectiveness and efficiency studies. Evaluation studies may be commissioned to understand the outcomes and impacts of technologies and interventions.

The figure below shows common planning, monitoring and evaluation outputs that result from typical costing, budgeting, resource mapping, expenditure tracking and cost effectiveness study types along the four stages of the planning cycle.

Output from each Stage

- National policies and guidelines
- Global policies and guidelines (WHO, UNAIDS)
- PEPFAR Country Operational Plan (COP) Guidance
- Global Fund Funding Request investment policies and country allocation letter
- National Strategic Plans

- Program evaluations and reviews
- Program reviews by PEPFAR's Scientific Advisory Board and the Global Fund's Technical Evaluation Reference Group
- Global Fund - Office of the Inspector General reports
- Retrospective costing studies
- Cost-effectiveness and efficiency studies
- Value for money assessments
- National Aids Spending Assessment and National Health Accounts
- World Bank Public Expenditure Reviews



Output from each Stage

- National and sub-national health budgets and associated M&E frameworks
- Global Fund Funding Request, budgets and performance frameworks
- PEPFAR Country Operational Plans
- Program annual operational and performance plans

- Quarterly program progress reports
- Management accounts (produced by finance directorates)
- Annual audit
- Global Fund performance
- Monitoring and reporting
- PEPFAR expenditure reporting

Click on the relevant Stage to navigate to each **Stage**

The remainder of this reference document is structured according to the four stages of the planning cycle. Under each stage, the reader will be presented with three tables showing information on:

- 1** Study types associated with HIV/AIDS economics research questions,
 - 2** A brief description of the typical approach for these studies
 - 3** Descriptions of potential methods and tools that respond to the research questions and related planning requirements.
-



STAGE 1: POLICY, PLANNING AND PRIORITIZATION

Activities under this planning stage include:

- Considering the effectiveness of existing health policies given evidence from Stage 4
- Assessing the impact of international policy and national level economic and other policies
- Conducting forward looking modelling and/or scenario planning
- Defining revised/new policy priorities e.g. Treat All, geographic prioritisation, differentiated care.
- Determining a broad resource envelope possibly for preferred planning scenarios
- Allocating a resource envelope broadly between treatment, prevention pillars and enabling environment strategies

The table below comprises study questions and related study types for Stage 1 of the planning cycle.

The table is a useful resource for choosing the appropriate type of study that fits your research questions.

Study types and related research questions for Stage 1 of the planning cycle

<i>Study type</i>	<i>Study questions</i>	<i>Study description</i>
Estimating the medium- and long-term resource requirements and/or total budget impact	<ul style="list-style-type: none"> • What is the full cost of a disease programme? • What are the total funding required to achieve strategic objectives in the HIV NSP? • How much will it cost to scale up a new intervention 	This study type seeks to estimate the total resources needed to implement the national strategic plan, components of the plan or other discrete programs over a medium to long-term period. The estimates are high-level and largely rely on estimates of coverage and output level unit costs.
Funding landscape analysis	<ul style="list-style-type: none"> • What are the total resources being invested in health/HIV? • Is their sufficient funding to achieve planned intervention outcomes, and where are the funding gaps? 	<p>A funding landscape analysis is a review of the investment environment for a national or sub-national health programme, with the overall objective of mobilising, co-ordinating and optimising future investments to achieve programme goals.</p> <p>The funding landscape analysis describes and quantifies the various sources of funding to support the HIV response and usually includes funding from external partners, government sources and the private sector.</p>



Funding landscape analysis (cont.)		<p>This level of analysis typically excludes household expenditure which would be included in expenditure analysis surveys. The period of analysis typically includes 2 or 3 years of historical data, the current financial year and 3 to 5 years of prospective analysis, depending on the needs of the strategic planning products that the analysis will inform.</p>
Resource mapping	<ul style="list-style-type: none"> • What are the total resources being invested in health/HIV? • Is their sufficient funding to achieve planned intervention outcomes, and where are the funding gaps? 	<p>Resource mapping in this context refers to ad hoc studies to research and map in detail how the funding flows from source, including government and partners, to intermediaries and implementers in the health sector. The mapping frequently distinguishes between allocated funding, approved budget values and disbursements.</p> <p>Although typically based on current budget values, the analysis may include previous years as well as budgets for future years, where these are available. Where possible, the flow of funding is mapped by interventions and cost categories. The level of detail is higher than the funding landscape tables referred to above and the mapping typically a lot more comprehensive.</p>
Geographic allocative efficiency and prioritization study	<ul style="list-style-type: none"> • Are resources for PHC or a specific HIV intervention allocated efficiently across regions and districts? 	<p>This type of study seeks to determine how limited resources for a specific HIV intervention or combination of interventions should be allocated to different districts or other geographically demarcated areas. A standard methodology and tools to facilitate efficient geographic allocation of resource does not appear to currently exist and the approach to these types of studies should be guided by existing use cases and experiences in countries where geographic allocation has been implemented.</p>
Economic and epidemiological modelling and/or priority setting	<ul style="list-style-type: none"> • What is the cost and health impact of implementing prioritised interventions at targeted coverage levels? • What is the optimal mix of interventions to maximise impact within a given funding envelope? • Should the intervention be included in the benefit package? 	<p>To address the many questions which relate to the allocation of limited resources to different combinations of health programs or interventions within health programs to maximise health impact and outcomes is usually underpinned by cost effectiveness analysis. The analysis usually requires the epidemiological modelling and economic analysis for different scenarios which also includes the calculation of incremental cost effectiveness ratios where specific options are considered. These studies are not costing studies but use the output from costing studies to facilitate the economic analysis.</p>

The table below provides more detailed information on the above study types and unpacks the typical scope and approach of each study type. This information should assist you in developing your methods statement or study protocol.

Typical approach for study types in Stage 1 of the planning cycle

<i>Perspective</i>	<i>Time period for data analysis</i>	<i>Annual projection period</i>	<i>Research scope</i>	<i>Level of detail of study</i>	<i>Normative vs actual costs</i>	<i>Reporting outputs</i>	<i>Outputs used for</i>
Study type Estimating the medium- and long-term resource requirements and/or total budget impact							
<ul style="list-style-type: none"> • Provider (Government/ implementing agent/ Partner) 	<ul style="list-style-type: none"> • Prospective 	<ul style="list-style-type: none"> • Medium to Long term (5-20 years) 	<ul style="list-style-type: none"> • Programme or Multiple interventions 	<ul style="list-style-type: none"> • Not detailed 	<ul style="list-style-type: none"> • Normative 	<ul style="list-style-type: none"> • Intervention total cost • Programme total cost 	<ul style="list-style-type: none"> • Investment cases • NSPs • Resource mobilisation • Global Fund applications • Budget bids
Study type Funding landscape analysis							
<ul style="list-style-type: none"> • Provider/ Funder 	<ul style="list-style-type: none"> • Prospective and/ or retrospective 	<ul style="list-style-type: none"> • Short to long term (1-20 years) 	<ul style="list-style-type: none"> • By programme 	<ul style="list-style-type: none"> • Not detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • Total funding by source • Total funding by programme and/ or intervention 	<ul style="list-style-type: none"> • Investment cases • NSPs • Resource mobilisation • Global Fund applications • Budget bids

Study type Resource mapping

<ul style="list-style-type: none"> • Provider/ Funder (Single or Multiple) 	<ul style="list-style-type: none"> • Prospective and/ or retrospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By programme • By intervention 	<ul style="list-style-type: none"> • Detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • Total funding by source, intervention, budget line, sub-population and geography 	<ul style="list-style-type: none"> • Investment cases • NSPs • Resource mobilisation strategies • Budget bids • Programme optimisation planning
---	---	--	---	--	--	--	--

Study type Geographic allocative efficiency and prioritization study

<ul style="list-style-type: none"> • Provider at e.g., sub- national 	<ul style="list-style-type: none"> • Prospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By intervention • By sub- population 	<ul style="list-style-type: none"> • Detailed 	<ul style="list-style-type: none"> • Actual or Normative 	<ul style="list-style-type: none"> • By sub- population and geography • Sub-national ranking for investment 	<ul style="list-style-type: none"> • Programme optimisation planning • Resource allocation decisions
---	---	--	---	--	---	---	--

Study type Economic and epidemiological modelling

<ul style="list-style-type: none"> • Provider/ Societal 	<ul style="list-style-type: none"> • Prospective 	<ul style="list-style-type: none"> • Medium to long term (5 -30 years) 	<ul style="list-style-type: none"> • By programme 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Normative 	<ul style="list-style-type: none"> • Total cost and impact per scenario • Optimisation scenarios Return on investment 	<ul style="list-style-type: none"> • Investment cases • NSPs • Resource mobilisation strategies • Budget bids • Programme optimisation planning
--	---	---	--	---	---	---	--

There are a number of methods and tools that are available under each type of study that respond to your research questions. The table below shows a selection of methods and tools and briefly describes what the tools can and cannot do. If you are interested in learning more about any particular method or tool, please visit our online repository [here](#) and type the name of the method or tool that you are interested in into the search bar.

Methods and tools that respond to the research questions in Stage 1 of the planning cycle

<i>Study type</i>	<i>Types of tools</i>	<i>What the tool can do</i>	<i>What the tool does not do</i>
Estimating the medium- and long-term resource requirements and/or total budget impact	Resource Needs Model	Projects total resource needs for HIV interventions based on output level coverage targets for up to 10 years.	The result is a total resource need estimate by HIV intervention but does not provide estimates by health system level or cost category.
	OneHealth Tool	The tool provides planners with a single framework for scenario analysis, costing, health impact analysis, budgeting and financing of strategies for all major diseases and health system components including some selected non-health interventions that may have health impacts. Cost and impact estimates can be developed at health system or program level.	The tool is designed to cost health interventions at intervention output level. This results in the loss of some of the costing detail and granularity which may be available from disease specific, ingredients-based costing tools.
Funding landscape analysis	Global Fund Landscape tables	The Global Fund funding landscape tables are a series of templates that facilitate the calculation and description of sources of and value of support for the HIV, TB and malaria responses.	These are templates and are provided with limited guidance. Except for the calculation of totals there is little automation. A detailed methodology of how the figures should be derived is not provided.
Resource mapping	National AIDS spending Assessment (NASA)¹	Using standardised methodology, guidelines and data collection templates detailed information is collected on sources of funding and intended use. An attempt is made to reconcile the sources of funding with the expenditure of available funding. NASA provides significantly more detail about HIV than the NHA.	It is not possible to provide resource mapping information for the current financial year. The exercise takes a long time to complete and output data is typically between a year and two years old.

¹ Specific module

Resource mapping (cont.)	Health Accounts NHA²	Sources of funding are quantified for the health sector. The exercise generates useful macro-economic indicators such as total health expenditure and government domestic health expenditure etc. It shows the allocation of resources between major health programs.	National Health Accounts are not typically produced each year. The exercise takes a long time to complete and output data is between a year and two years old. The accounts provide limited detail about the allocation of resources within the HIV response.
	HRTT/RMET³ Public Expenditure Tracking Survey (PETS)	Although a standard tool kit is available, guidance suggests the development of an approach to resource mapping based on country specific information needs and the subsequent development of country specific applications. (Initiatives supported by CHAI and the GFF (WB) and other partners). Study approaches can be developed to generate current data.	A participatory development process responds to country needs and requirements. Over a number of years, the system can evolve to provide routine data but initially this is likely to be an ad-hoc study.
	Public Expenditure Tracking Survey (PETS)	Public Expenditure Tracking Surveys are tools in a methodology used to map the flow of public resources (including human, financial, or in kind) from the highest levels of government to frontline service providers through the different levels of government and can help policy makers identify areas of leakage.	PETS does not necessarily result in a reconciliation between actual expenditure and resource flows but focuses on identifying delays in financial and in-kind transfers, leakage rates, and general inefficiencies in public spending.
Economic and epidemiological modelling	Spectrum GOALS model	Using existing Spectrum projections and unit cost input data, GOALS calculates the health impacts and outcomes for a set of pre-defined scenarios. Scenarios present different combinations of HIV interventions in terms of coverage. High-level costs estimates are produced for each scenario.	GOALS generates a high-level resource needs estimate of any given scenario which usually includes the NSP. If a more detailed costing or resource needs estimate is required of the HIV response or NSP strategies, GOALS is not able to produce detailed estimates.

² Specific module

³ Approach, methodology and related tool kits

Economic and epidemiological modelling (cont.)	OPTIMA	<p>Assist allocation of current/projected budgets across the portfolio of interventions in HIV responses. Combines epidemiological model of HIV transmission and disease progression integrated within a flexible economic and financial analysis to inform on i.e. program cost-effectiveness, allocative and technical efficiency, returns on investment, long-term epidemiological forecasts and optimal allocation to achieve set objectives.</p>	<p>Does not produced detailed budgeting estimates/ not a budgeting tool.</p>
	DCP 3 Disease Control Priorities Cost Model (DCP-CM)	<p>Tool developed to support the costing of universal health coverage in two country economic contexts (LIC and lower-MIC). Provides a single point of reference for cost effectiveness evidence. Meant to give the user a sense of the probable magnitude of the cost of various combinations of interventions (or EUHC as a whole) for the 2 stylized countries.</p>	<p>The online tool is not designed to generate precise estimates of the cost of interventions to do budgeting/ planning at a country level. The cost of various combinations of interventions is based on a very heterogeneous mix of countries and health system arrangements.</p>



STAGE 2: BUDGET PLANNING AND ALLOCATIONS

This stage involves translating strategic plans and policy priorities into programmes and allocating resources to implement planned interventions, as part of the annual budget cycle.

The following planning and evaluation activities typically support a national budget planning process:

- Formulating & negotiating sector budgets
- Compiling operational plans with detailed intervention targets which align with latest strategic policies and guidelines
- Detailing cost estimates of implementing interventions
- Compiling national level and sub-national budgets based on targets and detailed costing data
- Loading approved budgets onto institutional accounting system or PEPFAR/GF specific systems

The table below comprises study questions and related study types for Stage 2 of the planning cycle. The table is a useful resource for choosing the appropriate type of study that fits your research questions.

Study types and related research questions for Stage 2 of the planning cycle

<i>Study type</i>	<i>Study questions</i>	<i>Study description</i>
Detailed cost estimates of planned or scaled-up interventions	<ul style="list-style-type: none">• What is the total cost/budget implication of implementing a new intervention?• What is the incremental cost to scale up an intervention?• What unit costs should be used for budgeting?• At line-item level, what is the appropriate cost per patient for different facility types?	Conducted to estimate, in a relatively high level of detail, the costs of implementing interventions over a period of one to three years. Frequently rely, as a starting point, on operational plans and WHO or country guidelines, usually use an ingredients-based approach which examines the resources consumed by the intervention and often allocate estimated costs to activities.






<p>Identification and analysis of technical efficiencies and potential cost savings</p>	<ul style="list-style-type: none"> • Can technical efficiencies be implemented to realize savings? 	<p>The research and analysis required to identify technical efficiencies is varied and non-standard in nature. There appears to be no widely distributed, standard methodology to guide this type of analysis and as a result this can take on many forms.</p> <p>Analysis and quantification of possible technical efficiencies may be based on simple methods such as process mapping for service delivery options, a detailed review of input costs, changing to different drug regimens, results from pilot studies testing new health technologies and other innovations while assessing the efficiency of components of the health may deploy relatively sophisticated analysis such as data envelopment analysis and stochastic frontier analysis.</p>
<p>Multi sectoral and cross-sectoral funding analysis as part of detailed operational planning and costing <i>(frequently part of Economic and epidemiological modelling)</i></p>	<ul style="list-style-type: none"> • How will budgeted costs be shared across multiple funding sources? 	<p>The analysis of different funding sources to support the implementation of HIV or PHC interventions is often carried out as part of other research studies described above.</p> <p>Several disease specific cost estimation tools allow users to attach a source-of-funding flag to each costed activity or to line items. This allows subsequent summary reporting by source of financing which could include different sectors, non-governmental actors and development partners. This type of analysis is particularly useful where different sources of finance are used to fund a single intervention, which is often the case in practice.</p> <p>Formal budgets are typically institution-specific and do not provide for an overall view of all projected financing sources. In practice, this type of forward mapping of resources is made more difficult because of different institutional budget structures and expenditure coding which may not align directly with budget structures.</p>
<p>Prioritization of available resources based on known cost effectiveness analysis and other criteria</p>	<ul style="list-style-type: none"> • How do we allocate and prioritize budget allocations across health programs within the funding envelope? • Where do we re-allocate savings to/from? 	<p>Prioritisation is an ongoing process which starts with the Policy and Prioritisation process in Stage 1 of the planning cycle, and then cascades into the detailed planning and budgeting stage (Stage 2) and surfaces during the budget execution cycle, where it may be necessary to reallocated unspent funds or prioritise as a result of lower than anticipated budget distributions. As part of this planning stage the analysis concerns itself with detailed prioritisation within the budget envelope as part of the process of compiling the detail budget request. There does not appear be a widely accepted, standard methodology for detailed budget prioritisation. However, an internet search for 'Prioritisation in the health sector' or similar phrase yields abundant published material on the subject matter and provides useful guidance and examples of prioritisation including guidance issued by several development institutions such as the World Bank and WHO.</p>

The table below provides more detailed information on the above study types and unpacks the typical scope and approach of each study type. This information should assist you in developing your methods statement or study protocol.

Typical approach for study types in Stage 2 of the planning cycle

<i>Perspective</i>	<i>Time period for data analysis</i>	<i>Annual projection period</i>	<i>Research scope</i>	<i>Level of detail of study</i>	<i>Normative vs actual costs</i>	<i>Reporting outputs</i>	<i>Outputs used for</i>
Study type Detailed cost estimates of planned or scaled-up interventions							
<ul style="list-style-type: none"> • Provider 	<ul style="list-style-type: none"> • Prospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By programme • By intervention 	<ul style="list-style-type: none"> • Detailed 	<ul style="list-style-type: none"> • Normative/ actual 	<ul style="list-style-type: none"> • Intervention unit costs • Total intervention costs • Total Programme total cost 	<ul style="list-style-type: none"> • National and sub-national health budgets and associated M&E frameworks • Global Fund Funding Request, budgets and performance frameworks • PEPFAR COPs • Program annual operational and performance plans

Scope and approach	Outputs used for
Study type Identification and analysis of technical efficiencies and potential cost savings	
<ul style="list-style-type: none"> A standardised, globally used methodology and tool was not identified for inclusion in this report. However, many online guides and published articles provide some guidance, two of which are listed below as examples: <ul style="list-style-type: none">  Tools and methodologies to assess the efficiency of health care services in europe  Health system efficiency: How to make measurement matter for policy and management 	<ul style="list-style-type: none"> Optimisation of available resources and related planning Improving allocative efficiency through reallocation of potential savings to effective interventions Development of more accurate unit costs which are inputs into modelling, resources needs estimation and investment planning.
Study type Multi sectoral and cross-sectoral funding analysis as part of detailed operational planning and costing	
<ul style="list-style-type: none"> A standardised, globally used approach, methodology and tool was not identified for inclusion in this report. 	<ul style="list-style-type: none"> National and sub-national health budgets and associated operational plans Global Fund Funding Request, budgets and performance frameworks PEPFAR COPs
Study type Prioritization of available resources based on known cost effectiveness analysis and other criteria	
<ul style="list-style-type: none"> A standardised, globally used methodology and tool was not identified for inclusion in this report. Some published material, however, provides useful guidance on the subject matter and examples of prioritisation including guidance issued by several development institutions. One such example includes: <ul style="list-style-type: none">  WHO: Strategizing national Health in the 21st century: a handbook 	<ul style="list-style-type: none"> National and sub-national health budgets and associated operational plans Global Fund Funding Request, budgets and performance frameworks PEPFAR COPs

There are a number of methods and tools that are available under each type of study that respond to your research questions. The table below shows a selection of methods and tools and briefly describes what the tools can and cannot do. If you are interested in learning more about any particular method or tool, please visit our online repository [here](#) and type the name of the method or tool that you are interested in into the search bar.

Methods and tools that respond to the research questions in Stage 2 of the planning cycle

<i>Study type</i>	<i>Types of tools</i>	<i>What the tool can do</i>	<i>What the tool does not do</i>
Detailed cost estimates of planned or scaled-up interventions	Antiretroviral Therapy Unit Cost	The tool was developed to estimate the unit cost of providing pre-antiretroviral therapy, paediatric and adult AIDS treatment with the option to change regimen mix, testing, and visit schedules. The unit is per patient cost per annum.	The tool generates unit cost and links with the (Spectrum) Resource Needs Model. It does not generate total ART intervention costs which are generated from the RNM, but comprehensive unit costs can be applied to coverage estimates to arrive at a total cost estimate. Standard reports do not reflect activity costs.
	VMMC Decision Makers Program Planning tool costing component)	The VMMC tool comprises a modelling and a costing module. The costing module facilitates the development of an ingredients-based unit costs for facility-based circumcisions and can be adapted for outreach. Costs can be based on either actual or normative values.	The tool generates unit cost and does not generate total VMMC intervention costs. Comprehensive unit costs can be applied to coverage estimates to arrive at a total cost estimate. Standard reports do not reflect activity costs but do include unit costs by cost category.
	HIV Testing and Counselling Service Delivery Costing Model	This model assists in estimating the cost of each client receiving HTC as well as the amount of staff time and other inputs required to perform the services. It also provides for determining the most efficient ways to allocate resources based on the country context and how cost-efficient each service delivery model is.	Insufficient data was available to facilitate a comment on possible limitations of the tool.
	Key Populations Costing Workbook	The tool facilitates the collection and consolidation of costing data for providing prevention services to a single contact within the key populations (unit cost). It helps funders and decision-makers understand the costs of providing HIV services to KPs. It shows the share between overhead and service provision costs. Total program costs are also calculated.	If used for multiple countries in one workbook, cost estimates are not definitive at the country level, given the variability and limitations of the data across government and non-government delivery platforms.

Detailed cost estimates of planned or scaled-up interventions (cont.)	PrEP it costing and modelling	<p>The tool helps governments and stakeholders plan, monitor, and evaluate their PrEP delivery to those in need. Use of the tool facilitates an assessment of service capacity, monitoring, projecting needs for drugs, setting targets, estimating unit and total program costs and projecting the impact of service delivery.</p>	<p>The cost forecasts are for a period of 12 months and do not provide multiple year cost estimates.</p> <p>Costs are presented by cost category and not by activity but do include unit costs by cost category and district.</p>
	Institutional budget systems and tools	<p>Ultimately, most government and partner budgets are compiled using generic templates, usually issued by the treasury (in government) or similar departments. These templates are structured to reflect standard government budgeting structures (votes, sub-votes, programs and sub, programs etc.) and align with the general ledger coding.</p>	<p>Budget templates and processes do not generate cost and operational input data but rely on research studies, actual expenditure and external workings to provide required values and operational quantities</p>
	HOSPICAL	<p>Although primarily designed to analyse actual costs by cost centre in a hospital setting, the tool does generate output-based unit costs and facilitate efficiency analysis and projecting costs if hospital services are expanded or modified.</p>	<p>HOSPICAL does not calculate detailed service line costs without some adaptation but focuses on the cost of in-patient stays and out-patient visits based on the hospital clinical costs centres. Consequently, detailed prospective cost projections for specific services within cost centres are not generated.</p>



STAGE 3: EXECUTE BUDGET AND ROUTINE MONITORING

During Stage 3 of the planning cycle, financial and programmatic performance is monitored by management and oversight forums through analysing routine data from management information systems and short-term corrective actions may be executed as part of an adaptive management system. Development partners will generally have their own budget and performance management systems in place and may be integrated with government planning processes to achieve targeted results.

Activities implemented by Stage 3 participants might include:

- Implementing approved activities using allocated budget
- Maintain accurate institutional accounting and reporting systems
- Compiling routine financial and non-financial performance reports
- Compile reports to meet national reporting commitments to partners/international agencies
- Prepare for and facilitate annual audits/validations

The table below comprises study questions and related study types for Stage 3 of the planning cycle. The table is a useful resource for choosing the appropriate type of study that fits your research questions

Study types and related research questions for Stage 3 of the planning cycle

<i>Study type</i>	<i>Study questions</i>	<i>Study description</i>
Routine expenditure tracking by intervention	<ul style="list-style-type: none"> • How much has been spent on each intervention (more detailed than program level and <u>not</u> budget line-item detail only)? 	Routine expenditure tracking by intervention refers to the ongoing recording and reporting of expenditure on a monthly and quarterly basis. Institution-wide accounting and reporting systems are used to capture the underlying transactions and produce routine reports. Whether or not these systems are able to report on specific HIV interventions or PHC services depends on how the general ledger has been structured and coded. In most cases, government accounting systems are not able to routinely report expenditure by intervention and typically provide reports by budget line items, programs, cost centres (usually health facilities or specific functions) and by budget vote ⁴ . Unless specific budget line items have been created for HIV related expenditure, such as ARVs, expenditure on similar line items from all health programs are lumped together.

⁴ These represent examples and government accounting system are mostly unique in terms of their structure and coding

<p>Routine expenditure tracking by intervention (cont.)</p>	<ul style="list-style-type: none"> Does expenditure by intervention or programme area reflect planned allocations based on allocative efficiency analysis? 	<p>On the other hand, most development partners require detailed expenditure tracking by their implementing partners which requires ledger coding to facilitate reporting by line item, supported intervention and frequently by main activity. In particular PEPFAR has developed a comprehensive system of tracking expenditure which must be complied with by their implementers and the Global Fund requires expenditure reporting by module and costing dimension.</p>
<p>Efficiency and intervention unit cost analysis</p>	<ul style="list-style-type: none"> Is the unit of expenditure per health intervention output aligned with the expected unit cost for that output? 	<p>In this context and given the related questions posed under Stage 3, this line of research and analysis suggests that intervention expenditure and output and outcomes data can be used to routinely calculate a number of efficiency and other indicators which are useful to manager for ongoing resource and financial management. In most cases efficiency indicators include the calculation of unit costs for health services and rates of resource consumption by district or facility (where possible) to facilitate comparative analysis, early identification of outliers and setting of benchmarks.</p>
<p>Routine resource mapping</p>	<ul style="list-style-type: none"> What are the current available sources of funding by source? 	<p>In this context, resource mapping refers to the tracking of all resources invested in the HIV response from source to implementers. (The consumption of resources is included in expenditure tracking). Resource mapping includes the measurement of resources allocated by funders, the value of approved budgets and the disbursement of funds to intermediary organizations and implementers. It includes resources made available by government and non-government sources of financing such as Partners and the private sector and in some instances out of pocket payments by patients.</p>
<p>Internal/external audit and data validation</p>	<ul style="list-style-type: none"> Is the data accurate, complete and valid? 	<p>While audit and data validation functions are not costing or related studies, these are listed here as routine activities which take place annually or more frequently and are a critical component of the broader data management ecosystem. Effective execution of these functions is critical to ensure the accuracy and reliability of financial and non-financial data and the robustness of the underlying systems and controls that generate the data. Where these activities are absent, data becomes unreliable and undermines the value of reporting which in turn introduces inefficiency in planning and decision making and the ability of managers to respond rapidly and effectively to changing circumstances.</p>

The table below provides more detailed information on the above study types and unpacks the typical scope and approach of each study type. This information should assist you in developing your methods statement or study protocol.

Typical approach for study types in Stage 3 of the planning cycle

<i>Perspective</i>	<i>Time period for data analysis</i>	<i>Annual projection period</i>	<i>Research scope</i>	<i>Level of detail of study</i>	<i>Normative vs actual costs</i>	<i>Reporting outputs</i>	<i>Outputs used for</i>
Study type Routine expenditure tracking by intervention							
<ul style="list-style-type: none"> • Provider 	<ul style="list-style-type: none"> • Retrospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By intervention 	<ul style="list-style-type: none"> • Detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • Expenditure by source and intervention, beneficiary, budget line 	<ul style="list-style-type: none"> • Quarterly program progress reports (financial/ non-financial) • Management accounts (produced by finance directorates) • Annual audit • Global Fund Performance Updates and Disbursement Requests from PRs to CCM and GF Country Team • Global Fund budget re-alignment requests • Digital program/ grant performance dashboards • PEPFAR COP progress reports to HQ?

<i>Scope and approach</i>	<i>Outputs used for</i>
Study type Efficiency and intervention unit cost analysis	
<ul style="list-style-type: none"> • These studies comprise of routine calculation of intervention unit costs or efficiency measures such as rates of resource consumption by district or facility. 	<ul style="list-style-type: none"> • Quarterly program progress reports (financial/ non-financial) • Management accounts (produced by finance directorates) • Annual audit • Global Fund Performance Updates and Disbursement Requests from PRs to CCM and GF Country Team • Global Fund budget re-alignment requests • Digital program/ grant performance dashboards • PEPFAR COP progress reports to HQ
Study type Routine resource mapping	
<ul style="list-style-type: none"> • These studies encompass retrospective analyses that measure, at a high level of detail, resource allocation from various sources to e.g. the HIV at the various level (government, funders, implementer). Actual costs are measured. 	<ul style="list-style-type: none"> • Quarterly program progress reports (financial/ non-financial) • Management accounts (produced by finance directorates) • Annual audit • Global Fund Performance Updates and Disbursement Requests from PRs to CCM and GF Country Team • Global Fund budget re-alignment requests • Digital program/ grant performance dashboards • PEPFAR COP progress reports to HQ

There are a number of methods and tools that are available under each type of study that respond to your research questions. The table below shows a selection of methods and tools and briefly describes what the tools can and cannot do. If you are interested in learning more about any particular method or tool, please visit our online repository [here](#) and type the name of the method or tool that you are interested in into the search bar.

Methods and tools that respond to the research questions in Stage 3 of the planning cycle

<i>Study type</i>	<i>Types of tools</i>	<i>What the tool can do</i>	<i>What the tool does not do</i>
Routine expenditure tracking by intervention	Institutional accounting and reporting systems	Institution wide systems are designed to capture expenditure transactions on an ongoing basis and produce routine expenditure reports aligned to the budget architecture.	These systems are usually not able to provide detailed reports by intervention, activity or health program due to the consolidation of similar expenditure by line items.
	Resource mapping Expenditure Tracking (RMET)	The Global Finance Facility and other supporting partners assist countries to develop a country system which, once mature, reports up-to-date resources mapping and expenditure across the health sector (partners and government).	Accurate reporting requires the participation of all partners and timeous submission of expenditure data. For government budgets and expenditure data, IFMIS is required which generates data in the required format and with accuracy. The system consolidates and analyses data but does not replace the accounting and budgeting system.
	PEPFAR Financial Management System	PEPFAR provides publicly available information online, that allows users to: <ul style="list-style-type: none"> • View and utilize PEPFAR-planned funding, program results, and expenditure analysis data in an accessible and easy-to-use format. • Budget expenditure information available at the sub-program level ad cost category level. 	The updated Expenditure Reporting system does not track budget and expenditure data by sub-national geography. Expenditure reports reflect only PEPFAR expenditure and not total intervention expenditure.
	ABC-M Routine Expenditure Reporting system (PEPFAR)	The ABC-M system, once fully implemented, aims to provide accurate and routine activity-based expenditure reporting for planning and responsive management and to improve the efficiency of service delivery. The system will use data generated by country systems.	In order to generate detailed activity-based reports, accurate expenditure data must be available in the required format. The system consolidates and analyses data but does not replace the accounting and budgeting system. Allocation keys for shared and above facility costs are not updated automatically.

Efficiency and intervention unit cost analysis	Reproductive Health Cost Reporting System (RHCR)	Routinely analyses financial, commodity, labour, and other cost data to estimate what it costs to deliver specific interventions, what the cost drivers are, and how these costs may differ across service delivery points (SDPs), across regions and over time. The system is designed as a general cost analysis system that can be completely customised for any health delivery system.	Once the system has been set up and customised, input data must be collected and entered regularly if reports are to be produced regularly. The system does not automatically 'harvest' data from country systems through an electronic interface.
	Routine Efficiency Monitoring System (REMS)	The REMS relational database creates an electronic linkage between IFMIS and DHIS2 data. It steps down quarterly IFMIS expenditures to the facility, allocates these to specific HIV services, and calculates unit costs for HIV services at facility level.	The system does not provide accounting functionality or independently track expenditure but provides an automated framework for routine efficiency analysis.
	ABC-M	The ABC-M system, once fully implemented, aims to provide accurate and routine activity-based expenditure reporting for planning and responsive management and to improve the efficiency of service delivery. The system will use data generated by country systems.	In order to generate detailed activity-based reports, accurate expenditure data must be available in the required format. The system consolidates and analyses data but does not replace the accounting and budgeting system. Allocation keys for shared and above facility costs are not updated automatically.
Routine resource mapping	Resource Mapping Expenditure Tracking (RMET) <i>Includes the Health Resources Tracking Tool (HRTT)</i>	The Global Finance Facility and other supporting partners assist countries to develop a country system which, once mature, reports up-to-date resources mapping and expenditure across the health sector (partners and government).	Accurate resources mapping requires the participation of all partners and timeous submission/capture of funding and budget data. Once mature, the system may include electronic linkage to government budget systems. The system consolidates and analyses data but does not replace the accounting and budgeting systems.



STAGE 4: EVIDENCE AND EVALUATION

The final stage of the planning process involves the evaluation of policies, implemented programs and interventions and how finances were allocated and spent. This stage includes program reviews, evaluations and retrospective cost analysis studies including cost effectiveness and efficiency studies. The studies, reviews and evaluations included in this stage are non-routine in nature (as defined above) and are implemented periodically. This stage generates much of the evidence and information needed by the participants in Stage 1 to review and set policy, facilitate strategic planning and prioritisation.

Typical activities under this stage include the following:

- Evaluate policies, and programs and interventions delivered under the policies
- Conduct non-routine studies which include:
 - Assessment of how finances were allocated and spent (including expenditure tracking surveys)
 - Cost effectiveness and comparative efficiency studies
 - Retrospective costing studies (e.g. large, once-off studies and high-level step-down costing studies)
 - Once-off resource mapping and funding landscape analysis

The table below comprises study questions and related study types for Stage 4 of the planning cycle. The table is a useful resource for choosing the appropriate type of study that fits your research questions.

Study types and related research questions for Stage 4 of the planning cycle

<i>Study type</i>	<i>Study questions</i>	<i>Study description</i>
Expenditure tracking survey	<ul style="list-style-type: none"> • What was the total HIV program expenditure by intervention? 	Comprehensive expenditure tracking surveys seek to compile a complete ‘picture’ of how available resources, usually from all sources, have been spent. Expenditure is allocated to interventions, activities, budget line items, intermediaries, implementers and levels of the health system facilitates subsequent analysis and reporting. Expenditure tracking can also be carried out together with resource mapping to facilitate an analysis of how funds flow from source to beneficiary. A reconciliation between the resource mapping and expenditure tracking provides valuable insights. Comprehensive expenditure tracking surveys require a significant investment and can take up to a year to complete.

<p>Efficiency and intervention unit cost analysis</p>	<ul style="list-style-type: none"> • Is the unit of expenditure per health intervention output aligned with the expected unit cost for that output? 	<p>In this context and given the related questions posed under Stage 3, this line of research and analysis suggests that intervention expenditure and output and outcomes data can be used to routinely calculate a number of efficiency and other indicators which are useful to manager for ongoing resource and financial management. In most cases efficiency indicators include the calculation of unit costs for health services and rates of resource consumption by district or facility (where possible) to facilitate comparative analysis, early identification of outliers and setting of benchmarks.</p>
<p>Cost effectiveness analysis</p>	<ul style="list-style-type: none"> • What are the outcomes/ impact of the program and was the intervention cost effective? 	<p>Cost-effectiveness analysis (CEA) is a way to examine both the costs and health outcomes of one or more interventions. It compares an intervention to another intervention (or the status quo) by estimating how much it costs to gain a unit of a health outcome, like a life year gained or a death prevented⁵. CEA provides information on health and cost impacts of an intervention compared to an alternative intervention (or the status quo). If the net costs of an intervention are positive the results are presented as a cost-effectiveness ratio such as cost per case of disease prevented or cost per death averted. If the net costs are negative (which means a more effective intervention is less costly), the results are reported as net cost savings. The results from CEA is one of the most frequently used forms of economic evaluation to support the activities in Stage 1, Policy, planning and evaluation. Cost effectiveness of specific interventions are key inputs into epidemiological models such tools such as GOALS and Optima which facilitate the comparison between different combinations of interventions.</p>
<p>Value for money analysis</p>	<ul style="list-style-type: none"> • Did the program provide value for money (economical, allocatively and technically efficient, equitable and sustainable)? 	<p>The Global Fund describes Value for Money (VfM) as a concept that defines how to maximize and sustain equitable and quality⁶ health outputs, outcomes and impact for a given level of resources. It is generally accepted that an assessment of VfM requires an assessment of economy, effectiveness, efficiency and equity. The Global Fund technical note adds a fifth dimension, Sustainability. An assessment of value for money therefore requires the use of results from various types of economic evaluation and analysis, most of which are referred to in this report. The Global Fund technical note provides a useful description of VfM terminology and methodological guidance. Results from the VfM analysis facilitate accountability and inform the planning and prioritisation activities in Stage 1.</p>
<p>Public expenditure reviews</p>	<ul style="list-style-type: none"> • Was actual expenditure aligned with strategic priorities? 	<p>PER is a methodology framework which guides expenditure reviews which are completed at a relatively high-level of reporting. Individual health service costs are not calculated but existing expenditure is analysed and indicator values may be calculated.</p>

⁵ <https://www.cdc.gov/policy/polaris/economics/cost-effectiveness.html#:~:text=Cost%2Deffectiveness%20analysis%20is%20a,gained%20or%20a%20death%20prevented>

⁶ Value for Money Technical Brief, The Global Fund, November 2019

<p>Public expenditure reviews (cont.)</p>	<ul style="list-style-type: none"> • What barriers or bottlenecks prevented efficient budget execution? • What are the implications for policy and programming? 	<p>A Public Expenditure Review (PER) analyses the quantity and quality of public spending over time against policy goals and performance indicators (UNICEF G/01/2017). The PER may cover all government expenditure or focus on one or more priority sectors, such as health, education or water and sanitation. PERs are commonly used as part of the process to develop a country strategy or to review progress against policy and plans. The PER methodology essentially compares the allocation and expenditure of government funds against national policy priorities. A PER typically makes use of <u>existing</u> data in countries. If more detailed costing data is required, these are frequently collected using the Public Expenditure Tracking Surveys (PETS) methodology and tools.</p>
<p>Detailed, retrospective cost analysis of HIV/package of PHC interventions</p>	<ul style="list-style-type: none"> • What were the actual costs and cost drivers of specific interventions? 	<p>Detailed retrospective costing studies seek to estimate the actual cost of specific HIV interventions (or combination of interventions) and aim for a high level of granularity. Several different methodologies can be applied but typically these require primary data collection from a sample of health facilities, an analysis of the ingredient resources consumed to deliver interventions and the valuation of these consumed resources. The detailed costing approach determines the costing perspective, whether costing comprises economic or financial costing (or both), whether it is a comprehensive (full) costing or isolates certain cost elements only (e.g. facility level costs) or whether only incremental costs will be considered. In many settings, detailed retrospective costing studies make use of a mixed-methods approach which combines, for example, detailed ingredients-based costing of facility costs with step-down costing to allocate overhead it costs. Although not always the case, activity-based costing is frequently used as a method to facilitate the identification and costing of ingredients by activity. The advantage of this approach is the ability to analyze costs not only by cost line items but also by activities, which together must be implemented to deliver the intervention.</p>
<p>High-level analysis of actual costs</p>	<ul style="list-style-type: none"> • What were the actual costs and cost drivers of specific interventions? 	<p>In certain situations, where the available time for generating research results and/or budget is limited, it may be appropriate to estimate expenditure by intervention by using step down costing methodology for overhead and above facility costs and (crude) tracing factors for shared direct costs. This methodology may not be as accurate in determining intervention costs and cannot yield detailed activity-level costs (unless used as part of a comprehensive ABC costing exercise) but may generate results that are sufficiently accurate to support planning and decision making. The advantage is that the level of effort and the cost involved to generating top down estimates is relatively low in comparison to more comprehensive costing studies. A specific, stand-alone tool to facility step down costing for HIV has not been identified although some ingredients-based costing tools contain functionality for limited step-down costing of overhead costs.</p>

The table below provides more detailed information on the above study types and unpacks the typical scope and approach of each study type. This information should assist you in developing your methods statement or study protocol.

Typical approach for study types in Stage 4 of the planning cycle

<i>Perspective</i>	<i>Time period for data analysis</i>	<i>Annual projection period</i>	<i>Research scope</i>	<i>Level of detail of study</i>	<i>Normative vs actual costs</i>	<i>Reporting outputs</i>	<i>Outputs used for</i>
Study type Expenditure tracking survey							
<ul style="list-style-type: none"> • Provider or societal 	<ul style="list-style-type: none"> • Retrospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • Determined by study purpose but frequently by intervention 	<ul style="list-style-type: none"> • Detailed or not detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • Depending on the information need expenditure can be reported by intervention, cost category, line item, fund source or all of the above 	<ul style="list-style-type: none"> • Resource allocation policies and decisions • Resource mobilisation and advocacy • Investment cases • Analysis of average program costs • Monitoring of allocative efficiency
Study type Public expenditure reviews							
<ul style="list-style-type: none"> • Provider 	<ul style="list-style-type: none"> • Retrospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By programme and intervention 	<ul style="list-style-type: none"> • Not detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • Usually high-level analyses reporting expenditure by programme/ intervention and by health system level 	<ul style="list-style-type: none"> • Revised strategic planning • Fiscal interventions by Treasury • Re-prioritisation of resources • Adaptive management

Study type Detailed, retrospective cost analysis of HIV/package of PHC interventions

<ul style="list-style-type: none"> • Provider or societal 	<ul style="list-style-type: none"> • Retrospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By programme and intervention 	<ul style="list-style-type: none"> • Detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • By programme, intervention, cost category and possibly activity and line item 	<ul style="list-style-type: none"> • Cost effectiveness studies • Resource needs estimations • Resource allocation • Efficiency improvement plans • Budgeting
--	---	--	---	--	--	---	--

Study type High-level analysis of actual costs

<ul style="list-style-type: none"> • Provider or societal 	<ul style="list-style-type: none"> • Retrospective 	<ul style="list-style-type: none"> • Short to medium term (1-5 years) 	<ul style="list-style-type: none"> • By programme and intervention 	<ul style="list-style-type: none"> • Detailed/ Not detailed 	<ul style="list-style-type: none"> • Actual 	<ul style="list-style-type: none"> • By programme, intervention and cost category 	<ul style="list-style-type: none"> • Cost effectiveness studies • Resource needs estimations • Resource allocation
--	---	--	---	--	--	--	---

Scope and approach

Outputs used for

Study type Cost effectiveness analysis

- Cost-effectiveness analysis (CEA) is a way to examine both the costs and health outcomes of one or more interventions. It compares an intervention to another intervention (or the status quo) by estimating how much it costs to gain a unit of a health outcome, like a life year gained or a death prevented. An examination of standardised, globally used methodologies and tools for CEA falls outside the scope of this report. Extensive methodological guidance for cost effectiveness analysis is, however publicly available on the internet and in authoritative texts such as Drummond et al.
- See also example of how cost effectiveness analysis results were used together with modelling under Economic and epidemiological modelling and/or priority setting above
- An interesting example of cost effectiveness analysis is described in the *Cost-effectiveness of HIV prevention for high-risk groups at scale: an economic evaluation of the Avahan programme in south India*; Anna Vassall et al; doi: 10.1016/S2214-109X(14)70277-3. Epub 2014 Aug 27

- Investment cases
- NSPs
- Resource mobilisation strategies
- Budget bids
- Programme optimisation planning

Study type Value for money analysis

- The Global Fund describes Value for Money (VfM) as a concept that defines how to maximize and sustain equitable and quality health outputs, outcomes and impact for a given level of resources. It is generally accepted that an assessment of VfM requires an assessment of economy, effectiveness, efficiency, and equity. The Global Fund technical note adds a fifth dimension, Sustainability. However, a standardised, globally used tool was not identified for inclusion in this report.

- Funding requests and budget bids
- Re-prioritisation of resources Adaptive management
- Efficiency improvement plans Procurement strengthening
- Processes
- Advocacy and planning for improved equity



There are a number of methods and tools that are available under each type of study that respond to your research questions. The table below shows a selection of methods and tools and briefly describes what the tools can and cannot do. If you are interested in learning more about any particular method or tool, please visit our online repository [here](#) and type the name of the method or tool that you are interested in into the search bar.

Methods and tools that respond to the research questions in Stage 4 of the planning cycle

<i>Study type</i>	<i>Types of tools</i>	<i>What the tool can do</i>	<i>What the tool does not do</i>
Expenditure tracking survey	National AIDS Spending Assessment	NASA describes the flow of resources spent in the HIV response by intervention from their origin (source of financing) to the beneficiary populations. It aims to reconcile the expenditure incurred at implementation level with financing provided. This analysis provides a significant amount of detail.	Implementing the NASA methodology is time consuming and results are generated which are between a year and two years old. It cannot routinely generate expenditure tracking data unless institutionalised and integrated into government accounting systems. NASA does not provide estimates of future expenditure
	National Health Accounts	National Health Accounts (NHA) is an internationally standardized methodology that tracks public and private expenditures on health in a given country, illustrating the flow of funds from financing sources to agents, providers and ultimate the services on which they are spent. NHA uses an internationally accepted coding framework, the System of Health Accounts (SHA).	Implementing the NHA methodology is time consuming and results are generated which are frequently a year. NHA cannot routinely generate expenditure tracking data unless institutionalised and integrated into government accounting systems and partners provides routine reports in the same format. NHA do not provide detailed results by intervention.
Public expenditure reviews	World Bank Public Health Expenditure Review (PER)	The PERs supports the process to develop a country strategy and to review progress against policy and plans. The PER methodology facilitates a comparison between the allocation and expenditure of government funds against national policy priorities. The scope of a PER is flexible and can be adjusted to meet country or sector-specific needs.	The World Bank PER guidance assists practitioners to complete the review. The Review relies mainly on secondary data and is effectively a desk-top exercise. Existing data is analysed to inform the review. Where necessary a PETS (see iii Resource mapping, above) is carried out to support the review.

<p>Routine resource mapping</p>	<p>Resource mapping Expenditure Tracking (RMET) <i>Includes the Health Resources Tracking Tool (HRTT)</i></p>	<p>The Global Finance Facility and other supporting partners assist countries to develop a country system which, once mature, reports up-to-date resources mapping and expenditure across the health sector (partners and government).</p>	<p>Accurate resources mapping requires the participation of all partners and timeous submission/capture of funding and budget data. Once mature, the system may include electronic linkage to government budget systems. The system consolidates and analyses data but does not replace the accounting and budgeting systems.</p>
<p>Detailed, retrospective cost analysis of HIV/package of PHC interventions</p>	<p>HOSPICAL Tool (costing module)</p>	<p>The tool analyses current hospital costs and revenues to support prospective estimates. The tool uses step-down costing to allocate actual expenditure and revenue (including donor funded resources) in a hospital to ancillary and clinical departments that serve as cost centres. Output-based unit cost calculated to facilitate efficiency analysis, and support planning.</p>	<p>HOSPICAL does not calculate detailed service line costs without some adaptation but focuses on the cost of in-patient stays and out-patient visits based on the hospital clinical costs centres. Notwithstanding the above, these provide a platform for more detailed costing.</p>
	<p>ABC-M baseline costing module</p>	<p>The ABC-M system, once fully implemented, aims to provide accurate and routine activity-based expenditure reporting for planning and responsive management and to improve the efficiency of service delivery. The system will use data generated by country systems.</p>	<p>In order to generate detailed activity-based reports, accurate expenditure data must be available in the required format. The system consolidates and analyses data but does not replace the accounting and budgeting system. Allocation keys for shared and above facility costs are not updated automatically.</p>
	<p>PHC-CAP baseline costing module</p>	<p>PLACEHOLDER: <i>Significant revisions are being made to the tool which will impact on this description.</i></p>	
<p>High-level analysis of actual expenditure by intervention</p>	<p>Step-down Cost Accounting Model</p>	<p>The SDCAM uses a “step-down” cost accounting methodology to apportion costs from higher-level cost centres to lower-level cost centres that are closer to direct patient care, in a stepwise process. It is typically used in a hospital setting to estimate unit costs.</p>	<p>Shared direct costs captured at the department level and assigned to interventions through allocation keys. The model does not provide for ingredients-based costing. Results may not be as accurate unless the allocation keys are based on detailed activity analysis.</p>

FURTHER GUIDANCE FOR PLANNING YOUR COSTING OR RMET STUDY

The purpose of this reference guide was to provide an organised compendium of common study types, methods and tools for common HIV economic questions to enable planners, managers and budget holders to plan the development of their evidence base more efficiently. The section below outlines typical steps of planning an economic study, once a decision has been made about the evidence needed and the methods and tools available to generate the evidence. The process described below is generic in nature and each institution should have its own standard operating procedures and processes for compiling requests for mobilizing resources, recruiting and contracting service providers and overseeing and coordinating research and planning implementation.

The next steps in the process of implementation are briefly described below as a means of providing a way forward. The process described below is generic in nature and each institution has its own standard operating procedures and processes for compiling requests for mobilizing resources, recruiting and contracting service providers and overseeing and coordinating implementation. Nevertheless, implementation should provide for at least the following in addition to institution specific requirements; some of these steps may unfold concurrently.

Assess data availability: Assessing the availability of required financial and operational data, given a particular approach and methodology, is essential. Before proceeding with the drafting of detailed terms of reference and proceeding with implementation, a detailed assessment of data availability should be carried out. It is seldom that complete data is available in the precise format required and it is frequently necessary to analyse or convert available data to make it suitable for use. However, in some instances this is not possible and in such a case, it may be necessary to re-examine the selected methodology and tool and explore other alternatives. In practice, the solution frequently comprises a mixed-method approach which combines elements from different methodologies or may require the development of a custom tool. Although this step is frequently included in the inception phase of the research study, it is our view that early completion of this step informs an assessment of feasibility and improves the drafting of terms of reference and the understanding of related deliverables.

Develop a schedule for implementation: An accurate schedule for implementing the research study is important and maps out the key implementation milestones, some of which are described here in this section, against a timeframe. Drafting the schedule requires a good understanding of institutional procurement modalities and other procedural requirements. Experience shows that implementation almost always takes longer than anticipated which can have negative consequences in situations where the output from the study informs other planning processes such as budget preparation. Being realistic about the time required to obtain necessary approvals, mobilise resources, employing technical assistance service providers and the time required to complete the study, will ultimately result in a more controlled process which establishes realistic expectations with stakeholders and a better quality end product.

Assess internal capacity to implement and support the research study: All assignments comprise a team effort between the client, the technical assistance service providers and selected stakeholders including key informants and steering committee members. It is important to understand what capacity can be mobilised internally to do some of the work and to support the service providers. Managing and supporting large research studies can be very onerous and should not be underestimated. The available internal capacity should be assessed and should inform the development of terms of reference and the study time frames. Failing to mobilise adequate internal capacity can significantly impact on the study and frequently results in delays in implementation.

Establish an oversight committee: The purpose of an oversight committee includes the need to ensure efficient implementation of the study, secure technical expertise to inform the design of the study, assess the quality of draft products and guide the finalisation of these, advocate for the use of end products and provide a mechanism for accountability. The committee can include representatives from government at national and sub-national levels, partners, funders and external users and experts. Establishing the committee early is advantageous as members can provide valuable input for drafting the TORs and support the technical assistance procurement process

Draft terms of reference and consult with stakeholders: It is important to develop terms of reference which accurately capture research study objectives, the study scope, a preferred methodology and required deliverables. Many templates and guidance exist for drafting TORs. Poorly drafted TORs can negatively impact on the study process and output. These can be interpreted differently by different parties, can lead to a misunderstanding between client and consultant and ultimately impact on the quality of the product. TORs should be shared widely amongst stakeholders to ensure that uncertainties are removed as far as this is possible and to establish a common understanding between stakeholders before consultants are recruited and work commences.

Estimate study costs and resource mobilisation: Estimating the total cost of a study is sometimes difficult but is necessary to motivate for and secure resources for the study, whether funded from the government budget or by a partner. To do this, consulting with colleagues and partners can be useful as many will have been involved in similar studies and may be able to provide a good estimate of the total cost of the study. The total level of effort should also be estimated based on the terms of reference and applied to an indicative daily rate for international and local experts. Past experience may also provide an indicative rule of thumb which can be applied to the value of consultants' time to estimate total direct study expenditure (travel, training and other direct costs). If direct expenses are likely to be significant, these should be quantified more accurately by developing an estimate for each main activity described in the terms of reference

Recruitment and contracting of service providers: The recruitment, selection and contracting of service providers may vary significantly from one country to another and between institutions depending on the value of the procurement and procurement procedures. These will address the need for competitive procurement, restricted or published calls for proposals and other procurement modalities, the process of evaluation and selection of service providers and subsequent contracting. This process often takes longer than anticipated and should be understood and adequately provided for in the schedule referred to earlier. The recruitment process should encourage the participation of local consultants to lead studies where possible or work closely with expert international consultants to support ongoing efforts to strengthen technical assistance capacity in countries.




Develop a strategy for dissemination and use: Lastly, maximising the use of study results for planning and decision making is a key objective. Careful consideration should be given to the dissemination of results at the end of the study through workshops with national and sub-national levels, distribution of soft-copy materials to target audiences, focused presentations to key working groups and individuals and through publications. A strategy for dissemination should be considered early in the process and provided for in the terms of reference to ensure that relevant products are produced at the end of the study such as policy briefs and manuscripts for publication in addition to the full study report.

ANNEXURE 1: LIST OF TOOL REVIEWS IN ONLINE REPOSITORY





The purpose of this annex is to list the key costing methodologies and tools included in the online repository that was compiled as part of the authors' landscaping and mapping exercise. Each overview summary in the repository includes links and references, where these were available, to more detailed reviews, descriptions about and/or use of the methodology or tool.

Annexure 1.1	Spectrum Resource Needs Model (RNM)	Annexure 1.11	Reproductive Health Cost Reporting System
Annexure 1.2	OneHealth Tool (OHT)	Annexure 1.12	Routine Efficiency Monitoring System (REMS)
Annexure 1.3	Antiretroviral Therapy Unit Cost Spreadsheet	Annexure 1.13	Resource Mapping and Expenditure Tracking (RMET)
Annexure 1.4	VMMC Decision Makers Program Planning Tool (DMPPT 2)	Annexure 1.14	National AIDS Spending Assessment (NASA)
Annexure 1.5	HIV Testing and Counselling Service Delivery Costing Model (HSDC)	Annexure 1.15	National Health Accounts (NHA)
Annexure 1.6	Key Populations Costing Workbook	Annexure 1.16	Public Expenditure Review (PER)
Annexure 1.7	PrEP It Tool	Annexure 1.17	Step-down Cost Accounting Model
Annexure 1.8	HOSPICAL	Annexure 1.18	Public Expenditure Tracking Surveys (PETS)
Annexure 1.9	PEPFAR Financial Management System	Annexure 1.19	Primary Health Care Costing Tool
Annexure 1.10	Activity Based Cost Management (ABC/M)		








ANNEXURE 2: COMMON HEALTH ECONOMICS TERMINOLOGY

TERM	DESCRIPTION	SOURCE OF DESCRIPTION
ABOVE-SERVICE DELIVERY SITE COSTS	Costs incurred above the service delivery site, such as central management or administrative services, centralized training or education, centralized laboratory services, procurement/collection/distribution/storage of supplies, record-keeping, and surveillance. Note that above-service delivery site implies more centralized support processes at a district, regional or central level. There can be management, procurement, etc. at the site-level as well those that are conducted by the site/program.	 Guidelines for Costing of Social and Behaviour Change Health Interventions
ACTIVITY BASED COSTING	An approach to the costing and monitoring of activities which involves tracing resource consumption to activities, and costed activities to cost objects based on (activity) consumption estimates. The latter utilise cost drivers to attach activity costs to outputs. (Adapted from CIMA terminology). In the health context, health services are frequently defined as activities and resources consumed are traced directly to health services.	 CIMA Activity Based Costing
ACTUAL COST	A term to describe the underlying cost to produce a good or service, carry out an activity, or achieve a goal. That cost depends on many variables including input prices and decisions made by the producers (e.g. health care providers). The cost of delivering health services is not a single point that can be measured—rather, it is a function of decisions made by providers, which may include inefficiencies. Also referred to as “real cost”.	 Costing of Health Services for Provider Payment: A practical manual based on country costing challenges, trade offs and solutions
ALLOCATIVE EFFICIENCY ANALYSIS	The concept of allocative efficiency refers to the maximization of health outcomes using the least costly mix of health interventions. HIV allocative efficiency analysis addresses the question “How can HIV funding be optimally allocated to the combination of HIV response interventions that will yield the highest impact?”	 UNODC Science Addressing Drugs and HIV: State of the Art Scientific Consensus for High Level Segment of the 59 th session of the Commission on Narcotic Drugs
HEALTH BUDGETING	Health budgeting is an annual planning exercise that forecasts revenue and allocates resources to programs and interventions, to give effect to the budget holders financial objectives and commitments to implementing its health policies and strategies.	 Strategizing national health in the 21 st century: A handbook
HEALTH ECONOMIC MODELLING	Modelling can be broadly defined as the reproduction of events and possible consequences due to alternative policy options at the cohort or individual levels using mathematical and statistical frameworks.	 A systematic review of modelling approaches in economic evaluations of health interventions for drug and alcohol problems






Continued on next Page...

TERM	DESCRIPTION	SOURCE OF DESCRIPTION
COMPREHENSIVE (FULL) COST	Full cost of a service or package of services, including facility level, community activities, management, overheads and above site costs.	Own definition
EPIDEMIC AND DISEASE MODEL	Uses mathematics to describe the dynamics of disease acquisition or progression within individuals.	 Major Infectious Diseases 4 th edition. Ch 9 Improving the efficiency of the HIV/AIDS response: A guide to resource allocation modelling
EXPENDITURE	Expenditures reflect the financial outlay that an agent (e.g., government, donor or individual) spends during a period of time for goods and services. Expenditures can refer to the entire sum required by specified health services, or it may pertain only to those outlays incurred by a subset of the organizations involved in delivering the service. Note that expenditure data are usually reported using the cash basis method of accounting, that is, no amortization to capital goods is applied; all capital goods expenditures are recorded in full as they are incurred.	 Reference Case for Estimating the Costs of Global Health Services and Interventions
PUBLIC EXPENDITURE TRACKING	Public expenditure tracking involves tracing the flow of public resources for the provision of public goods or services from origin to destination	 Public Expenditure Tracking
FINANCIAL MANAGEMENT SYSTEM	An information system that tracks financial events and summarizes information and supports adequate management reporting, policy decisions, fiduciary responsibilities, and preparation of auditable financial statements.	 The World Bank Annual Report 2003: Volume 2. Financial Statements and Appendixes
HEALTH FINANCING SYSTEM	Set of policies and supporting arrangements that govern the resources and economic incentives of the health system. Includes revenues raising, pooling risk, strategic purchasing, governance and design of benefit policies.	 Strategic purchasing for Universal Health Coverage: key policy issues and questions. A summary from expert and practitioners' discussions
HISTORICAL COST	A historical cost is a measure of value used in accounting in which the value of an asset on the balance sheet is recorded at its original cost when acquired by the company. The historical cost method is typically used for fixed assets.	 Investopedia: Corporate Finance and Accounting




Continued on next Page...

TERM	DESCRIPTION	SOURCE OF DESCRIPTION
INGREDIENTS BASED COSTING	An ingredients-based costing approach measures both prices and quantities of ingredient resources consumed by an activity/service, rather than collecting aggregate expenditures.	 How to cost immunization programs: A practical guide on primary data collection and analysis
META DATA	Metadata summarizes basic information about data, making finding and working with particular instances of data easier.	 Open Data Soft
META-DATA ANALYSIS	Meta-data-analysis is the overarching analysis of the results of other scientific studies and is one of the branches of meta-studies. It is an umbrella term that refers to any secondary analysis of the findings of two or more primary research studies. Meta-data-analysis interrogates information that has resulted from other scientific research to gain a more integrative understanding of what has been discovered about some topic.	 SpringerLink: Encyclopedia of Quality of Life and Well-Being Research
MICRO COSTING	A costing method that determines the unit cost of producing a good or service, carrying out an activity, or achieving a goal by summing the cost of all inputs. In health services costing, this method is used to estimate the cost to deliver a narrowly defined service or to treat a type of patient. This method aims to determine as accurately as possible the observed cost of a service or patient through direct measurement of resource use.	 Costing of Health Services for Provider Payment: A practical manual based on country costing challenges, trade offs and solutions
NORMATIVE COST	A type of bottom-up costing that estimates unit costs from input requirements to deliver a specific health service according to standard treatment guidelines or expert opinion, and input prices derived from normatives, average market prices, and/or other sources. Also called clinical care pathway costing.	 Costing of Health Services for Provider Payment: A practical manual based on country costing challenges, trade offs and solutions
OPEN SOURCE	Open-source software is software with source code that anyone can inspect, modify, and enhance.	 Review of Primary Health Care Costing Tools
OVERHEADS	Overhead costs refer to costs that cannot be directly traced to the provision of a service, such as administration, security personnel, buildings and general equipment. These costs may be referred to in some texts as indirect costs. Due to terminology confusion, the Reference Case recommends use of the term “operational” activity cost.	 Reference Case for Estimating the Costs of Global Health Services and Interventions

Continued on next Page...

TERM	DESCRIPTION	SOURCE OF DESCRIPTION
PUBLIC FINANCIAL MANAGEMENT (PFM) SYSTEM	Set of rules and institutions, policies and processes that govern the use of public funds.	 WHO, 2017. Aligning PFM. Aligning public financial management and health financing: A process guide for identifying issues and fostering dialogue
PUBLICLY AVAILABLE	Any information that a licensee has a reasonable basis to believe is lawfully made available to the general public.	 Law Insider Dictionary
RELATIONAL DATABASE	A relational database is a type of database that stores and provides access to data points that are related to one another.	 Oracle: What is a Relational Database (RDBMS)?
RESOURCE ALLOCATION MODEL	Considers multiple interventions simultaneously and in various configurations to inform how effort and funding might be divided among different uses.	 Major Infectious Diseases 4 th edition. Ch 9 Improving the efficiency of the HIV/AIDS response: A guide to resource allocation modelling
RESOURCE TRACKING	Refer to resource mapping.	PEPFAR term. Own definition
RESOURCE MAPPING	A retrospective or prospective exercise to map the flow of funding from source through the health system. Mapping may include budgets, disbursements and commitments from different sources.	Own definition
RETRO-SPECTIVE COSTING	A costing exercise viewpoint in which the events of interest (expenditures and utilization) have already taken place when the exercise begins. This requires a measurement of resources consumed and attaching actual costs to consumed resources.	 Costing of Health Services for Provider Payment: A practical manual based on country costing challenges, trade offs and solutions
SHARED COST	Costs that can be allocated to two or more departments or services on the basis of shared utilisation or benefits.	Own definition

Continued on next Page...

TERM	DESCRIPTION	SOURCE OF DESCRIPTION
TIME DRIVEN ACTIVITY-BASED COSTING	Time-driven activity-based costing (TDABC) is a methodology that allows providers and staff to observe resource costs at the patient-level in order to inform delivery of care.	 Rethinking the cost of healthcare in low resource-settings: the value of time driven activity-based costing
TOP-DOWN COSTING	A costing method that first documents the total expenditure of an entity (e.g., health facility) and distributes it among the cost centres and then to units of output (e.g., bed-days, discharged patients, outpatient visits) to arrive at the average cost of resources used to produce a good or service, carry out an activity, or achieve a goal.	 Costing of Health Services for Provider Payment: A practical manual based on country costing challenges, trade offs and solutions
TRACING FACTORS	The allocation of shared resources to the health program is based on some 'allocation key' or 'tracing factor'. These tracing factors can also be used to allocate cost of inputs within programs to different program activities.	 How to cost immunization: A practical guide on primary data collection and analysis

ACKNOWLEDGEMENTS

Genesis Analytics acknowledges, with much gratitude and appreciation, the support received from the Bill & Melinda Gates Foundation for funding the development of this report and the continuous guidance and support received from Kate Harris at the Foundation. A special word of thanks to Dr Nandakumar (PEPFAR), Carlyn Mann, Elan Reuben and Sarah Baker from USAID for their regular participation in project meetings and valuable contributions over many months. We are grateful to all the experts and stakeholders who gave freely of their time and ideas to populate and discuss the list of costing, resource mapping and expenditure tracking methodologies and tools. We would also like to extend our sincere thanks to the reviewers who provided valuable suggestions to improve early versions of this report and to RBS Design Studio for final formatting.

DOCUMENT REFERENCE

Landscaping of methodologies and tools for HIV economic studies

DATE

7 November 2020

AUTHORS

Carl Schütte, Steve Cohen, Allison Pieterse

GENESIS ANALYTICS (PTY) LTD

Office 3, 50 Sixth Road, Hyde Park, **Johannesburg**

www.genesis-analytics.com

FUNDING

Funding for this project provided by the Bill & Melinda Gates Foundation
Seattle, Washington, **USA**
Contact Details: TBD

CONTACT PERSON

Carl Schütte
carls@genesis-analytics.com