

AGENDA OUTLINE

Allocative and Implementation Efficiency in the HIV Response

A 3-day training workshop on mathematical modelling tools to improve the efficiency of HIV programs

Any resource-constrained effort to improve health outcomes is inevitably faced with the need to achieve the best possible outcomes with a finite set of resources. Evidence from efficiency analyses can be used to inform strategic decision making in prioritization of which programs to fund. This is referred to as *allocative efficiency*. The concept of allocative efficiency refers to the maximization of health outcomes with the least costly mix of health interventions. Another efficiency in how programs are implemented, referred to as *implementation efficiency*. Implementation efficiency can be enhanced by a range of measures relating to service delivery modalities, management arrangements, unit costs in procurement, and several other areas. Simultaneously addressing these two aspects will result in the best chances of improving efficiency of a program. This workshop will introduce: (1) two concepts of efficiency and (2) analytical tools to assess allocative and implementation efficiency. The Optima HIV model, available from <http://hiv.optimamodel.com>, will be a core tool presented in this workshop. This tool can support national decision-makers, program managers, and funding partners in achieving maximum impact with the funding available for the country's HIV response. The purpose of this workshop is to train participants in how to undertake HIV efficiency studies and how to choose and use relevant tools for this purpose.

OBJECTIVE

After completing the three-day training workshop, participants will know how to conduct an HIV allocative and implementation efficiency analysis from planning to dissemination of results.

Participants will learn:

- What HIV allocative and implementation efficiency analyses entail, and how to plan such analyses;
- The steps required for collating and interpreting data for entry in an efficiency analysis project;
- How to calibrate the Optima model to better reflect the known course of the HIV epidemic;
- The processes for generating cost functions for relevant populations and programs;
- To conduct optimization analyses and determine the optimal HIV resource allocation across HIV programs to meet specific objectives or policy questions.

Proposed workshop materials

- Examples of HIV allocative efficiency and implementation efficiency studies
- Optima user interface, accessible through [Google Chrome browser](#). It is assumed that each participant will bring their **own laptop or desktop computer** to the workshop, and that *reliable* internet connection will be available at all times
- Presentations – new concepts (**blue text**) to be introduced through PPT presentations
- Worked examples, using preliminary country data
- Written exercises (using spreadsheets) and homework assignments (**red text**) are linked to training sessions (**green text**)

The training program for the week is devised around 4 types of sessions:

- **Black text** indicates general information or workshop session
- **Blue text** indicates concepts introduced
- **Green text** indicates training or skills development sessions
- **Red text** indicates practice sessions to be completed

Day 1

Chair: To be nominated

Duration	Session Name and Description	Approach	Facilitators
30 mins	Welcome and introduction to the workshop <ul style="list-style-type: none"> Welcome remarks Introduction of participants Participants to present their expectations Presentation of objectives and confirm objective(s) for the week 	Plenary	Country team Trainers
	DEFINING A COUNTRY ANALYSIS		
30 mins	HIV response: Current situation and challenges Presentation to update participants on latest trends in HIV epidemic and response	Plenary	Country team
	OVERVIEW OF KEY CONCEPT: RATIONALE FOR EFFICIENCY ANALYSIS		
45 mins	Overview on allocative and implementation efficiency in the HIV response <ul style="list-style-type: none"> Presentation Questions and Answers 	Plenary	Trainers
20 mins	Practice: The Scope of Work for efficiency analysis <ul style="list-style-type: none"> Brief summary presentation of planned work Questions and discussion Quick round of how participants feel they can contribute or add 	Plenary	Trainers
15 mins	Break		
	EPIDEMIC AND ALLOCATIVE EFFICIENCY ANALYSIS IN OPTIMA		
45 mins	Concept: Introduction to Optima <ul style="list-style-type: none"> Brief introduction to Optima Review of Optima Optima results and evidence of real change Questions and answers 	Plenary	Trainers
15 mins	Practice: Optima questions and answers <ul style="list-style-type: none"> Quick discussion on tables on technical questions and opportunities participants see 	Group	Participants
40 mins	Concept: Brief introduction to Optima interface <ul style="list-style-type: none"> Tour of Optima HIV interface Demonstration of a complete analysis from beginning to end 	Plenary	Trainers
60 mins	Lunch		
20 mins	Training: Creating an Optima project and data spreadsheet <ul style="list-style-type: none"> Creating and naming an Optima HIV project Managing Optima HIV project files Defining population groups and programs (including parameters influenced by the program) Guidelines data entry in the Optima HIV spreadsheet 	Tutorial	Trainers
20 mins	Practice: Create a project and define population groups	Group	Participants
20 mins	Collating data and populating Optima HIV spreadsheet Concept: Principles of project design and data entry <ul style="list-style-type: none"> Interpreting data sources and considerations for model parameters Handling uncertainties Avoiding double counting (people in populations) 	Plenary	Trainers
45 mins	Training: Resolving problems encountered working with the Optima HIV spreadsheet and reviewing data sources	Tutorial	Trainers
15 mins	Break		

Duration	Session Name and Description	Approach	Facilitators
30 mins	Practice: Uploading an completed Optima HIV spreadsheet	Group	Participants
15 mins	Training: Defining programs and parameters	Tutorial	Trainers
30 mins	Practice: Defining programs and parameters	Group	Participants
15 mins	Interactive discussion of questions and ideas arising from Day 1	Tutorial	Country team/Trainers
5 mins	Closure of Day 1	Plenary	Country team
	Evening exercise(s)/reading in preparation for Day 2 of workshop tomorrow Review Optima HIV input parameter priors Review Optima HIV spreadsheet and provide additional data	Exercises	Participants

Day 2

Chair: To be nominated

Duration	Session Name and Description	Approach	Facilitators
15 mins	Review of materials covered on Day 1, review questions, and plan for day 2	Group	Country team/Participants
20 mins	Concepts: Gathering data to inform cost functions <ul style="list-style-type: none"> Influence of cost functions Data requirements, sources, and concerns Provide examples	Plenary	Trainers
10 mins	Training: Using the cost functions interface	Tutorial	Trainers
25 mins	Practice: Defining cost functions	Group	Participants
20 mins	Training: Using automatic and manual calibration Steps for calibrating and what to look for in a calibration	Tutorial	Trainers
40 mins	Practice: Calibrating a model	Group	Participants
15 mins	Break		
20 mins	Training: Optima HIV scenario analyses <ul style="list-style-type: none"> How to define complex scenarios How to run analyses, view, export and interpret results 	Tutorial	Trainers
30 mins	Practice: Running Optima HIV scenario analyses and viewing, exporting, and interpreting results	Group	Participants
15 mins	Concepts: Any outstanding concepts	Plenary	Trainers
35 mins	Practice: Any outstanding Comparing impact	Group	Participants
60 mins	Lunch		
20 mins	Concepts: How does Optima HIV work? Mathematical optimization <ul style="list-style-type: none"> Explain how mathematical optimization is achieved Explain the optimization algorithm How does Optima HIV incorporate constraints? 	Plenary	Trainers
15 mins	Training: Defining objectives and constraints in Optima HIV <ul style="list-style-type: none"> Explain how objectives, constraints, and time horizons are introduced in Optima HIV Optima HIV settings to ensure objectives and constraints are met 	Tutorial	Trainers
15 mins	Practice: Defining objectives and constraints in Optima HIV <ul style="list-style-type: none"> Consider objectives from the scope of work 	Group	Participants
40 mins	Practice: Performing optimization analyses using Optima HIV <ul style="list-style-type: none"> Interpreting findings Understanding results with respect to objectives, time horizons, constraints, and cost functions 	Group	Participants
15 mins	Break		
ADDITIONAL SECTION			
45 mins	Concepts: any other concepts <ul style="list-style-type: none"> Key principles Country examples 	Plenary	Trainers
30 mins	Training: Review of TBD <ul style="list-style-type: none"> TBD 	Tutorial	Trainers
5 mins	Evening practical exercise: Complete a full country Optima-HIV analysis <ul style="list-style-type: none"> Work on an Optima HIV epidemic and allocative efficiency analysis 	Exercises	Participants
	Closure of Day 3		Country team

DAY 3

Chair: To be nominated

Duration	Session Name and Description	Approach	Facilitators
15 mins	Review of material covered on Day 2, clarify any issues, and plan for day 3 <ul style="list-style-type: none"> Training materials available 	Plenary	Country team/Participants
90 mins	Exercise: Complete full country Optima HIV analysis <ul style="list-style-type: none"> If complete, interpret findings and extract key messages and recommendations 	Group	Participants
15 mins	Break		
20 mins	Concepts: Interpreting analysis findings and extracting key messages and recommendations <ul style="list-style-type: none"> Review of different analysis and outputs with a focus on interpretation Extracting key messages or lessons from the analysis Structuring recommendations 	Plenary	Trainers
30 mins	Practice: Structure key recommendations from an Optima HIV analysis <ul style="list-style-type: none"> If full country Optima HIV analysis is complete, use your results otherwise, use default results Prepare a 4-slide PowerPoint presentation summarizing your Optima HIV analysis results 	Group	Participants
15 mins	Concepts: Integrating implementation efficiency within allocative efficiency	Plenary	Trainers
20 mins	Training: Different service modalities <ul style="list-style-type: none"> Choosing implementation modalities and options, defining interactions, and how they work in Optima HIV 	Group	Participants
35 mins	Practice: Conducting an analysis with interacting programs	Group	Participants
	Lunch		
	ADDITIONAL PRACTICE AND WAY FORWARD		
105 mins	Practice: Open session of analysis practice and questions	Group	Participants
15 mins	Break		
30 mins	Next steps in using tools for analytical applications	Plenary	Trainers
10 mins	Concepts: Access to Optima HIV and Q&A	Plenary	Trainers
15 mins	Participant reflection and feedback	Group	Participants
20 mins	Concluding remarks	Plenary	Country team
	Closure		Country team