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** • 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** • Presentation • Questions and Answers	Plenary	Trainers
20 mins	**Practice: The Scope of Work for efficiency analysis** • 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** • 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** • Quick discussion on tables on technical questions and opportunities participants see	Group	Participants
40 mins	**Concept: Brief introduction to Optima interface** • 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** • 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** • 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** • 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** • 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** • 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** • 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** • Consider objectives from the scope of work	Group	Participants
40 mins	**Practice: Performing optimization analyses using Optima HIV** • 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** • Key principles • Country examples	Plenary	Trainers
30 mins	**Training: Review of TBD** • TBD	Tutorial	Trainers
5 mins	**Evening practical exercise: Complete a full country Optima-HIV analysis** • 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** • Training materials available	Plenary	Country team/Participants
90 mins	**Exercise: Complete full country Optima HIV analysis** • 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** • 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** • 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** • 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