MANUAL ON THE SIMPLE LINEAR ACTUARIAL MODEL

Hiddo A. Huitzing, Xylee Javier, Rouselle F. Lavado, and Ammar Aftab

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Abbreviations

ADB	–	Asian Development Bank
AMD	–	Armenian dram
IMF	–	International Monetary Fund
IPD	–	inpatient day
OPD	–	outpatient day
SLAM	–	Simple Linear Actuarial Model
SLM	–	Simple Linear Model
VBA	–	Visual Basic for Applications

CHAPTER I

Introduction

Actuarial analysis is a form of statistical analysis typically conducted using health-related financial cost data in the context of calculating insurance premium rates or otherwise determining expenditure needs. It entails estimation of average healthcare expenditures of a risk pool so that financing needs can be estimated to ensure that revenues balance expected outlays. Costs are estimated from a consumption approach and takes the production of health services largely as a given. Actuarial analysis probabilistically determines utilization and associated expected expenditures that would be needed to finance healthcare from a pool of financial resources. (Cichon et al. 1999; Cotlear 2015; Wang et al. 2012).

This manual serves as a detailed guide to using the Microsoft Excel version of the Simple Linear Actuarial Model (SLAM). Specifically, Chapter II of this manual describes SLAM, including its limitation, potential data issues, and applicable baseline scenarios. Chapter III provides an overview of the SLAM file, for its intended users, to opening the file, and then guide to its contents. Chapter IV provides details on how to use the data input worksheets of the SLAM file, while Chapter V provides guidance on how to view the results of the modeling. Sensitivity analyses using the SLAM file are also discussed in this manual, and then concluded by a summary of the tool's use and potential.

The SLAM was developed for assessing the financial sustainability of national and local micro- health insurances in select countries in the South Caucasus region, Africa, Southeast Asia, and Central and West Asia. As an actuarial model, the SLAM should calculate and, at a glance, present the actuarial projections and financial key indicators to support the management in assessing the financial sustainability of health insurance programs. Updates envisaged include enrollment numbers (i.e., uptake, retention, and dropout rates), changes in healthcare costs, changes in profiles of members, and changes in health utilization.

The goal was to have an actuarial model that the management of the health insurance programs nationwide and at local levels could update themselves without the need of frequently contracted intervention of actuarial experts¹ and use for day-to-day management of the health insurance schemes.

¹ For more in-depth assessments and/or reviews of health insurance programs, health insurance and actuarial experts would still be needed. The SLAM is a tool that could considerably speed up the review process and increasing the transparency from one actuarial expert to the next.

CHAPTER II

The Simple Linear Actuarial Model

This chapter describes the Simple Linear Actuarial Model (SLAM) as a tool and provides insights to its limitation and potential data issues. Toward the end of the chapter, baseline assumptions required from the users before using the tool are also discussed.

A. Description

The SLAM is a tool that will permit using a present policy and make projections to assess the financial sustainability of health insurance operations. The actuarial projections derived from the model can show whether continuing business-as-usual operations is an option for health insurance schemes.

The Simple Linear Model (SLM) was used to estimate the costs and set a premium for health events that will be included in SLAM analysis. The SLM assumes that the total claim amount, called “pure premium,” is equal to the sum of the individual claims multiplied by their frequency of the event taking place.

The estimation of premium needed to covered medical expenses involves identifying the correlated costs of healthcare events covered by the insurance scheme. For instance, the associated correlating costs of a vehicular accident include X-ray use to assess whether bones are broken, and possible minor or major surgery, which might then be succeeded by hospitalization for an overnight stay. In the case of a complicated pregnancy, an emergency transport to a health facility might be needed. In the health facility where caesarian section is performed, the newborn might need premature care.

The SLAM was designed to be user-friendly, foolproof, have a high usability, and function as a decision-making tool to aid the management in their decision-making process in updating benefit packages, enrollment and eligibility criteria, while assessing the medium- to long-term financial sustainability and outlook of the health insurance program.

B. Limitation

The SLAM, at present, only looks at the pure premium, also called risk premium, which does not include operational expenses, although profit margins, risk loading, and administrative cost loading can be added. Moreover, questions on willingness-to-pay and ability-to-pay are not part of the model. Another aspect not covered by SLAM are the running costs of implementing the health insurance programs.

C. Potential Data Issues

For potential data issues of SLAM, some data sources (e.g., health insurance claims database) may have open format data entries leading to services provided being described inconsistently. Multiple services could also be entered in one field. This could lead to some services be excluded in the actuarial analysis.

Also, there could be incorrect recording of members who have availed themselves of health services. This can happen when a child (dependent) is admitted but the name of the parent is entered as the member. Another example is services provided to the newborn registered under the name of the mother. This will lead to incorrect linking of the type of membership and the health services provided, leading to errors in estimating costs per type of member.

Lastly, changes in the membership type that are not reflected in the final claims data could lead to incorrect calculation of length of enrollment.

D. Baseline Scenario

The SLAM recommends that expected costs and future trends for the provision of medical and nonmedical services for the insured populations be based on assumptions with regard to characteristics of the target population, incidences and prevalence of communicable diseases and chronic diseases, health-related events, and demographic and healthcare utilization trends.

The following text discusses baseline assumptions that users must identify before using the tool. Stepwise guides to setting up this required information are detailed in Chapter IV in Microsoft file.

1. General Assumptions

Assumption 1: Number of Periods

The SLAM permits defining different periods, e.g., months, quarters, and years, to be used in the number of periods of projections. The number of periods can be set at 5, 10, or 15.

Assumption 2: Inflation for Expenditures

The inflation for expenditures corresponds to the inflation of the costs of the health insurance program for health expenditures of its members, i.e., payouts to health facilities used by its covered members. SLAM users may base their inflation assumptions on the data from the International Monetary Fund (IMF).²

Assumption 3: Inflation for Revenues

The inflation for revenues is the increase in premiums paid by enrolled members. In the baseline scenario, SLAM users are advised to set the premiums as increasing once annually with the inflation based on the IMF published data, or they may set the inflation for revenues to zero while keeping the inflation of expenditures increasing based on *Assumption 2*. The analyst should also check existing laws and program mandates that allow or restrict premium increases, if any.

2. Risk Loading, Administrative Loading, and Profit Margin Assumptions

Risk loading represents the uncertainty of actuarial estimates: the probability and size of the estimate being smaller than the actual payout. It also shows how big the risk the insurer is willing to run, and is typically defined as a percentage of the expected health payouts. The increases in the premium are meant to offset increases in the health expenditures because of the higher risk of not knowing the health needs of the target population.

Administrative loading meanwhile represents the administrative costs of running the health insurance program. It is typically defined as a percentage of the expected health payouts, a fixed amount, or a combination of both.

The profit margin represents the profit of health insurance program. It is typically defined as a percentage of the expected health payouts or a percentage of the positive operational cash flow.

Assumptions 4, 5, and 6: Risk Loading, Administrative Loading, and Profit Margins

All three are assumed to be zero in the Baseline Scenario.

3. Target Population and Member Assumptions

Assumption 7: Target Population

The target population refers to the population intended to be covered by the health insurance programs.

² International Monetary Fund (IMF). IMF DataMapper. Inflation rate, average consumer prices. <https://www.imf.org/external/datamapper/PCPIPCH@WEO/OEMDC> (28 September 2020).

Assumption 8: Maximum Size of the Target Population and of the Health Insurance Program

The maximum size of the target population is also the assumed maximum size of the health insurance program if all members of the target population will be enrolled in the program.

Assumption 9: Member Group—Children

These numbers represent the persons who belong to the “Children” subgroup of the target population with age range from 0 to 7 years old.

Assumption 10: Member Group—Formal Sector

These numbers represent the persons who belong to the “Formal Sector” subgroup of the target population with age range from 18 to 63.

Assumption 11: Member Group—Disabled

These numbers represent the persons who belong to the “Disabled” subgroup of the target population with age range from 18 to 63.

Assumption 12: Member Group—Pensioners

These numbers represent the persons who belong to the “Pensioners” subgroup of the target population with ages 64 and above.

Assumption 13: Member Group—State Order—Others

These numbers represent the persons who belong to the “State Order – Others” subgroup of the target population with age range from 18 to 63.

Assumption 14: Member Group—Everyone Else

These numbers represent the persons who belong to the “Everyone Else” subgroup of the target population.

Assumption 15: Mutually Exclusive Member Groups

The SLAM user and/or analyst is expected to define whether member groups defined in Assumptions 9 to 14 are mutually exclusive or not. That is, if a member can only belong to one subset of target member population. For purposes of clarity, it is recommended that only one mutually exclusive group be used.

Assumption 16: Member Groups Order of Precedence

In case a member defined in Assumptions 9 to 14 is part of several subsets, the SLAM user is expected to define an order of precedence to be followed in the actuarial model. For instance if a member is registered as a “Formal Sector,” but at the same time grouped as “State Order – Others,” then in the SLAM it will be assumed that the member belongs to “State Order – Others” if the order of precedence

in the analysis is “Disabled” > “State Order – Others” > “Formal Sector.” Similarly, if a member of the formal sector is also registered as being disabled, then in the SLAM it will be assumed that the member is solely part of the group of “Disabled.”

4. Population Growth Rates

Assumption 17: Growth Rates of Subpopulations

The SLAM analysis requires defining growth percentages for the target population and its subgroups. The growth rates should not yet factor in dropout rates in the enrollment of these targeted member groups.

5. Health Categories and Health Services

The SLAM makes a distinction between “Health Services” and “Health Categories.” “Health Services” are the services provided to the members of the health insurance. All health services are then part of a subgroup or a “Health Category,” which could be “General Surgery,” “Cardiology,” “Gynecology,” or “Oncology,” among others.

Assumption 18: Health Categories

The “Health Services” that are covered by health insurance packages must be grouped into “Health Categories.” The SLAM allows for listing the same health services under more than one health category.

6. Health Needs, Health Services, and Health Service Costs

“Health Needs” are the latent needs of the population in terms of healthcare services they need. While some health needs will be obvious, such as the need for a delivery at the end of a pregnancy, other health needs may not be apparent (for example the need for tuberculosis treatment for a patient unaware of his/her condition).

Since there is no information on the actual “Health Needs” as earlier described, the SLAM will assume that the “Health Services” represent the health needs of the insured household members.

To estimate the probability of a “Health Service” occurring, the Law of Large Numbers is applied in the SLAM analysis. The Law of Large Numbers or the related Central Limit Theorem states that in a large population (of insured) members, the probability of an event taking place and the height of the resulting claim will be close to the expected values. In practice, this means that to estimate the probability and value of future claims, past incidences and claim values could be used.

For each “Health Service” that is included in the benefit packages of health insurance scheme, costs, prices, and tariff of providers will be used by the SLAM program to predict the expected value of future claims from current and future health insurance program members.

Assumption 19: Predicting Future Health Needs

To estimate the probability and expected value of future claims of the current and future members of the health insurance program, it would be ideal to have a similar population of insured persons and multiple years of claims data.

To obtain “similar” groups, the “Members” should not only be disaggregated according to subgroups as defined in *Assumptions 9 to 14*, but also according to sex and age groups as seen relevant by the SLAM users and decision makers.

This means that one looks at how many of the similar persons needed a specific health service, say in 2018, and divide this by the number of periods these similar persons were insured in the same year.

In the SLAM, the modeling of future “Health Needs” is done per “Health Service” as defined in *Assumption 18* for each of the periods defined in *Assumption 1* and standardized per 1,000; 10,000; or 100,000 members, per “Member Subpopulations” (i.e., subgroups defined in *Assumptions 9 to 14*).

Assumption 20: Stable Incidences and Prevalence Under the Baseline Scenario

In the Baseline Scenario, it is assumed that the incidences and prevalence of conditions do not change over time.

7. Benefit Packages

The benefit packages are those that define what services are covered at which healthcare facilities, what approvals are needed to obtain insurance benefits, and the limitation of the insurance coverage, among others.

In the SLAM analysis, it should be determined if there is a distinction in terms of the services the members may avail, if any. The differences in terms of the premium contributions from various types of members should also be considered.

8. Revenues from Premiums

The actuarial modeling requires the determination whether members are enrolled as individuals or part of a group enrollment. In the SLAM, the revenues are specified per sex and per age group by member subpopulations.

9. Uptake and Retention

The uptake or enrollment rates is defined as 100% of the growth rate of the target populations defined in *Assumption 17*. The SLAM analysis requires users to determine renewal rates, which the SLAM will then automatically use to compute for retention rates and dropout rates.

CHAPTER III

Getting Started with the Simple Linear Actuarial Model in Microsoft Excel

This chapter provides an overview of the SLAM file, for its intended users, to opening the file, and then guide to the SLAM file contents. Details on how to use the data input worksheets are discussed in Chapter IV, while details on how results are derived and viewed are discussed in Chapter V.

In this chapter, variables and parameters are denoted in *blue italics*, buttons are described in red underlined, while emphasized information are in black underlined.

A. Users

Countries working toward Universal Health Coverage are direct users of the Microsoft Excel-based SLAM. Project processing teams supporting client countries will also benefit from having a readily-available tool for making projections to assess the financial sustainability of health insurance operations.

B. The File

The SLAM has been developed to be intuitive and user-friendly in their use, yet elaborate and versatile enough to deal with most issues faced in actuarial modeling.

SLAM software has been programmed into Microsoft Excel, while the calculations have been programmed into the Visual Basic for Applications (VBA). To prevent user errors, VBA functionality is also used with regard to automatic changes to the layout and adding and/or deleting estimation items (e.g., type of service categories).

This manual recommends the SLAM Excel file to follow the naming convention *Country_SLAM_File_version date* where the version date is in *YYYYMMDD* format. This manual, however, makes use of a Microsoft Excel File: **“SLAM - MANUAL version.”** It has prefilled settings for the country *Armenia* with a few exemplary health categories, health services, and sample benefit packages as well. It is nested into one main folder (Figure 1).

Figure 1: Sample View of the SLAM Main Folder

SLAM = Simple Linear Actuarial Model.

For organizational purposes, this manual recommends that the SLAM file be located in one main folder bearing the current version's month and year. The location and name of the folder may vary but the SLAM Excel file must not be renamed. If the SLAM Excel file is updated on a different date, save as a new file bearing the new version date. The main folder thus can contain multiple SLAM files bearing different date stamps. It is highly recommended to update the SLAM file one time after another to prevent overlapping of files. Also, it is recommended to have a "File Manager" that keeps tabs on SLAM file updates, as well as for consolidation, in case updating of input sheets would be assigned to multiple personnel.

C. Opening the SLAM in Microsoft Excel

To start the SLAM File, users must double click the file (Figure 2). Opening the file may take some time due to its large size.

Figure 2: Opening the SLAM File

SLAM = Simple Linear Actuarial Model.

If opened for the first time, a yellow Message Bar with **Protected View** prompt will appear (Figure 3). This information is provided by Microsoft for every file that originated from an internet source, which could be unsafe (i.e., obtained by sharing the file over the internet). Files from the internet and from other potentially unsafe locations can contain viruses, worms, or other kinds of malware, which can harm your computer. By using Protected View, users can read a file and inspect its contents while reducing the risks that can occur.

Closing the “protected view” prompt would make the file to remain protected where editing is restricted but viewing is allowed.

Figure 3: Protected View Message Bar

To continue opening the file, click the [Enable Editing](#) button and another message bar with a **security warning** prompt will appear (Figure 4). This information is provided by Microsoft for every file that has active content (e.g., data connections, macros, among others) that may also contain viruses and other security hazards that could harm user’s computer or network. If the source of the file is trusted or that the active content is known to be secure, enable the file’s active content and click the [Enable Content](#) button. This makes the file a trusted document. Thus, when the file is reopened, the message bar does not appear.

Figure 4: Security Warning Message Bar

FOR YOUR INFORMATION

In Microsoft Excel, Visual Basic for Applications (VBA) operates via [add](#) and [delete](#) buttons in specific inputs worksheets (i.e., 1.2A Service Categories and 1.2B Health Needs) to prevent users from making mistakes if they try to add or remove variables. The model that has been programmed in Excel is fairly complex and inadvertently adding or removing a row or column manually (without using VBA buttons) on one sheet has consequences on the formulas written on multiple other sheets.

As noted, the buttons to add or remove data fields in the Simple Linear Actuarial Model (SLAM) have been programmed in VBA. For SLAM to work, the macros embedded in the file must then be enabled. More details on VBA buttons are found in the Legend worksheet (Chapter III-D).

In addition, if the file is saved on a network location or in the Cloud, a different **Security Warning** message window (Figure 5). The user must then press [Yes](#) to proceed.

Figure 5: Security Warning Message Window

TAKE NOTE

In the event that the Security Warning prompt was not displayed, it is probably necessary to check or redefine the general security settings of the Excel program (Appendix, pp. 135–137).

Depending on the general security settings, the user may already be able to work with the opened SLAM Excel file. The easiest way to check if editing is already allowed is to try a button, for instance, to add an item in worksheet 1.2A Service Categories. To do this: (A) type in a sample category under **“Add a Service Category”** in **cell B8** and then (B) click **Add Item**. A message window (C) showing the input will be displayed and click **OK** (D) to continue (Figure 6).

Figure 6: Checking the Opened SLAM File for Allowed Editing Permission (Part 1)

SLAM = Simple Linear Actuarial Model.

Note: Screenshot is from the 1.2A Service Categories worksheet.

A Message Box to assign a 3-character code to the new Service Category will be displayed. Input the desired code (e.g., “SAM”) and click **OK** (Figure 7).

Figure 7: Checking the Opened SLAM File for Allowed Editing Permission (Part 2)

SLAM = Simple Linear Actuarial Model.

Note: Screenshot is from the 1.2A Service Categories worksheet.

The new service category will then be added at the bottom of the table, row 666 or line number 608 in the sample Figure 8 below.

Figure 8: New Row for Added Health Service

	A	B	C	D	E	F
648	590	XX2_128	State_Order_Services_two	Operations of external genital organs and vaginal wall injury / adult /		
649	591	XX2_129	State_Order_Services_two	Communicable (infectious) / adult /		
650	592	XX2_130	State_Order_Services_two	Tonsillectomy, adenoidectomy General anesthesia		
651	593	XX2_131	State_Order_Services_two	Tonsillectomy, adenoidectomy General anesthesia / adult /		
652	594	XX2_132	State_Order_Services_two	Tonsillectomy, adenoidectomy local anesthetic		
653	595	XX2_133	State_Order_Services_two	Tonsillectomy, adenoidectomy local anesthesia / adult /		
654	596	XX2_134	State_Order_Services_two	Small metal constructions, clothes platform, platform forearm, collarbone platform (for ev		
655	597	XX2_135	State_Order_Services_two	Minor surgical interventions / adult /		
656	598	XX2_136	State_Order_Services_two	Kidney stone lithotripsy through (up to 4,000 stroke)		
657	599	XX2_137	State_Order_Services_two	Otolaryngological		
658	600	XX2_138	State_Order_Services_two	Otolaryngological / adult /		
659	601	XX2_139	State_Order_Services_two	Otolaryngological day care / adult /		
660	602	XX2_140	State_Order_Services_two	Orthopedic		
661	603	XX2_141	State_Order_Services_two	Orthopedic / adult /		
662	604	XX2_142	State_Order_Services_two	Orthopedic, surgical intervention		
663	605	XX2_143	State_Order_Services_two	Orthopedic day care / adult /		
664	606	XX2_144	State_Order_Services_two	Pustular surgery (including blood sowing established sepsis) / adult /		
665	607	XX3_2	State_Order_Services_three	General Surgical / adult / 1.08 /		
666	608	SAM_1	Sample_Category	Please replace with Service name		

Note: Screenshot is from the 1.2A Service Categories worksheet.

TAKE NOTE

Undo or CTRL +Z does not work with most VBA buttons. The **Delete** button must be used to remove entries in worksheets where macros are used.

SUMMARY REMINDERS IN OPENING THE SLAM EXCEL FILE

The SLAM file is located in one main folder bearing the current version's month and year (e.g., May 2020). The location and name of the folder may vary.

The naming convention of the SLAM Excel file follows *Country_SLAM_file_version date* where version date is in YYYYMMDD format.

The SLAM Excel file must not be renamed. Save as a new file bearing the new version date.

Make sure that the file being used is the latest version to date by checking the details of the file such as its *Name, Date modified, Type, and Size*.

D. Guide to File Contents

The SLAM file is composed of 13 color-coded worksheet tabs grouped as follows:

- **Information tab** refers to the Legend worksheet, which explains the formatting of entries, cells, buttons, and tabs in the SLAM Excel file. This sheet is detailed in this section.
- **Input tabs refer** to worksheets 1.0 General Assumptions–1.6 Uptake and Retention, where data are encoded and parameters are set. These sheets are detailed in Chapter IV.
- **Result tabs** refer to worksheets Dashboard and 3.1 Results, where actuarial modeling results are shown. These sheets are detailed in Chapter V.

The worksheets from left to right of the File tabs are summarized in Table 1. Tab colors, on the other hand, are summarized in Table 2 and are also discussed in the succeeding Legend worksheet.

Table 1: Description of Worksheets and Color Tabs in the SLAM File

Worksheet Name	Description
Legend	Provides help or explanation in terms of the texts, cells, buttons, and tabs in the file.
Dashboard	Contains a quick overview of the SLAM Output, using tabular and graphical presentation of the results.
1.0 General Assumptions	Allows setting up the name and number of periods of projections; currency and exchange rate used for projections. inflation for expenditures and revenues, risk and administrative loading, profit margin, and discount rate.
1.1A Target Populations	Allows setting up of up to six target groups by age and sex distribution.
1.1B Growth Target Populations	Allows setting up growth rates of the specific sex and age brackets of people in each target group, per specified period.

continued on next page

Table 1 *continued*

Worksheet Name	Description
1.2A Service Categories	Allows for adding, deleting, and defining service categories (e.g., inpatient/outpatient) and respective subservices (e.g., wound dressing/twin delivery).
1.2B Health Needs	Allows setting up code; rate per population; group, sex, and age bracket of target group; incidence/prevalence; and inpatient days (if applicable), per health service.
1.3 Health Supply - Costs	Allows setting up cost, prices, and tariffs of providers per health service.
1.4 Benefit Packages	Allows setting up benefit package definition in terms of health service provider; and whether the benefit is for inpatient, outpatient, or both.
1.5 Revenues	Allows setting up premiums per age bracket and sex of target groups for individual or set group rates.
1.6 Uptake and Retention	Allows for setting up number or percentage of members of the target population that are new enrollees and re-enrolls at the end the specified period of enrollment.
2.0 Generate Results	Provides a “Generate Results” button that updates the 3.1 Results worksheet.
3.1 Results	Shows the time series of results in tabular format for population projection; health needs; enrollment projections; expenditures projections; revenue projections inclusive and exclusive of risk loading/profit margin/premium increase; cash flow projections; discounted cash flow; expenditures per enrollee; revenues per enrollee; cash flow per enrollee; cash flow as % of revenues; and cash flow as % of expenditures.

SLAM = Simple Linear Actuarial Model.

Table 2: Color-Coding of Worksheet Tabs in the SLAM File

Tab Color	Worksheet Description
Green	Accessible worksheet that provides results in a dashboard interface.
Gray	Accessible worksheet that provides help and explanations.
Light Gold	Accessible worksheets that provide assumptions on general input.
Light Orange	Accessible worksheets that provide assumptions on benefit packages.
Dark Orange	Locked worksheet that enables updating the results worksheet.
Light Green	Locked worksheet that provides results in tabular form.

SLAM = Simple Linear Actuarial Model.

The Legend Worksheet

To serve as a guide, a Legend worksheet (Figure 9) was created as the default worksheet (i.e., first sheet of the SLAM file) to explain the basic contents (e.g., How the texts and numeric entries are formatted in the succeeding worksheets, among others).

Figure 9: Preview of the Legend Worksheet

Item blocks in this worksheet are about (i) information, (ii) input cells, (iii) free text cells, (iv) calculation cells, (v) buttons, and (vi) tabs, as explained below. Contents of this worksheet will also be shown in message boxes for subsequent sections, where applicable, to better appreciate stepwise details in navigating and using SLAM.

Information

Color-coding of informative texts used throughout the SLAM worksheets is shown in Figure 10. Explanatory texts, mostly in black font are provided in white background (see Figure 11 for samples). Important description, explanation, or actions to be undertaken are in blue font (see Figure 12 for sample). “Warning” texts are provided in red to highlight if there is an action needed that may result in error if not correctly inputted (see Figure 13 for sample). Some cells will also change color if certain inputs are contradictory or not allowed in the default settings.

Figure 10: Guide to Information Texts in the Legend Worksheet

INFORMATION	
Text	General descriptive text
Text	Informative text on what to do
Text	Important description / explanation / action to be undertaken
Text	Warning (action needed)

Figure 11: Sample Explanatory Texts

General descriptive text

Currency 1 (used for projections)
 Currency 2:
 Exchange rate currency 2 → 1

AMD	Please use 3 letter code for clarity
USD	Please use 3 letter code for clarity
480.5000	Exchange rate of 1.00 USD to AMD

Informative text

Note: The screenshot above is from the “1.0 General Assumptions” worksheet.

Figure 12: Sample of Important Description, Explanation, or Actions to be Undertaken

Adding / Deleting Service Categories

Add a Service Category - *Only letters allowed, case sensitive*

Delete a Service Category

Add Item

Delete Item

Note: Screenshot from the 1.2A Service Categories worksheet.

Figure 13: Sample Warning Text

Uptake is the number or percentage of members of the Target Population that enrolls and was not enrolled in the period before.

Note: there is no automatic check by the model if the input in percentage or numbers makes sense

Note: Screenshot from the 1.6 Uptake and Retention worksheet.

Input Cells

Color-coding of input cells for encoding and setting up of data is illustrated in Figure 14. These input cells can either be unrestricted, provided in orange background (see Figure 15 for sample); or restricted, provided in blue background. Restrictions in the input cells may include encoding only positive numeric values, integers, dates, and others, in black font (see Figure 16 for sample) or selection from a drop-down list in an underlined black font (see Figure 17 for sample). Furthermore, if the input to the drop-down list is defined on another worksheet (to the left of the current tab being used), it is shown using an underlined navy blue font (see Figure 18 for sample).

Figure 14: Guide to Input Cells Texts in the Legend Worksheet

Input Cells	
<input type="text" value="100.00"/>	Input cell, unrestricted
<input type="text" value="100.00"/>	Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
<u><input type="text" value="100.00"/></u>	Input cell, select option from list
<u><input type="text" value="100.00"/></u>	Input cell, select option from list, input defined on another sheet
<input type="text" value="100.00"/>	Input cell <i>contents ignored</i> (not included in calculations)
<input type="text" value="Inactive"/>	<i>Activation cell</i> - choose from drop down menu, color changes accordingly

Figure 15: Sample Unrestricted Input Cells

A	B	C	D	E	F	G	H	I	J	K	L	M
1	1.1A Assumptions for Target Populations: Profile at Start of Program											
2												
3	Target Groups: Age and Sex Distribution at Start of Program											
4	This is the number of people in each target group, age bracket, and sex at time 0 (i.e., at the start of Period 1).											
5	Groups may overlap as long as the tab for benefit packages makes eligibility clear.*											
6	*For instance, the first group may be the total population; other groups will then be subgroups.											
7	There are two ways to prevent double counting in case of non-mutually exclusive groups. First is to set applicable target group as 'inactive' in this worksheet. Should the user decide to exclude a group in the analysis, i.e. the group status is changed from 'Active' to 'inactive', the entries in the population distribution will be ignored by changing the font color into white, and the input cells into gray. Second, is to set a target group as 'No' in the 'include in analysis' column of the Dashboard											
8	Note: These numbers are the actual/current number of people belonging to the specific target population.											
9												
10	<div style="display: flex; justify-content: space-between;"> <div>G1: <input type="text" value="Children"/></div> <div>G2: <input type="text" value="Formal Sector"/></div> <div>G3: <input type="text" value="Disabled"/></div> </div>											
11												
12	<div style="display: flex; justify-content: space-between;"> <div>Select group status: <input type="text" value="Inactive"/></div> <div>Select group status: <input type="text" value="Active"/></div> <div>Select group status: <input type="text" value="Active"/></div> </div>											

Note: Screenshot from the 1.1A Target Populations worksheet.

Figure 16: Sample Restricted Input Cells

Various samples of restricted input cells

A

Inflation, by Period

	Expenditures	Revenues
1	0.917%	0.917%
2	2.522%	2.522%

Note: these are the 'living' people, not the numbers of (potentially) enrolled members

G1: **Children**

Select group status: **Active**

B

	≥ Lower Bound	Upper Bound
1	0	1
2	2	7

	Females	Males
1	39,060	44,238
2	116,431	132,242

Note: Screenshot A is from the 1.0 General Assumptions worksheet, while screenshot B is from the 1.1A Target Populations worksheet.

Figure 17: Sample Input Cell Restricted with Drop-Down List

Input cell restricted with dropdown list

Select number of Periods: **15.00**

5
10
15

Note: with this number the Number of Periods of Projections is also defined most often the period will be equal to a year or a month

Note: Screenshot is from the 1.0 General Assumptions worksheet.

Figure 18: Sample Input Cell where Input is Defined from Another Sheet

Sample input cell where entries are defined in another worksheet

Service Category	Service provided	per 1,000 / 10,000	Specify sub target population	Female	Male	UB
1 Burn	Burn treatment cases	100,000	G2: Formal Sector			
2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector			
3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector			
4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	G2: Formal Sector	Female	18	24
5 Cardiology	Stenting with drug eluted 3 stent	100,000	G2: Formal Sector	Female	18	24
6 Cardiology	Stenting with drug eluted 4 stent	100,000	G2: Formal Sector	Female	18	24
7 Cardiology	Magistral and peripheral artery stenting the stent	100,000	G2: Formal Sector	Female	18	24
8 Cardiology	Coronary artery balloon dilatation using one cylinder	100,000	G2: Formal Sector	Female	18	24

Simple Linear Actuarial Model Defined on '1.1A Target Populations'

Note: Screenshot from the 1.2B Health Needs worksheet.

The use of restriction in the input cells minimizes erroneous entries that the programmed SLAM file cannot understand or prevents the contents from being accidentally deleted. For instance, following Figure 16 and setting negative values to expenditures and sex as an example will prompt error reminders shown in Figure 19. The use of drop-down list in Figure 17, on the other hand, ensures that the parameter has the required information.

Figure 19: Sample Message Prompts for Encoding Incorrect Entries in Restricted Input Cells

Note: Screenshot A is from the 1.0 General Assumptions worksheet, while screenshot B is from the 1.1A Target Populations worksheet.

Other input cells defined by SLAM are the ignored and activation cells. Activation cells set the status of a variable or an indicator from active (i.e., included in the projections), denoted by a green input cell, or inactive (i.e., not taken into account), denoted by a red input cell. Inactivated entries where input values are ignored are denoted by a gray input cell with white texts. Screenshot B of Figure 19 shows an active status for sample subgroup **Children**, provided in green background. This means that the identified subgroup is included in the analysis. Figure 20, on the other hand, shows an example where the same subgroup, **Children**, is inactivated and ignored.

Figure 20: Sample Inactivated and Ignored Input Cells

Note: These numbers are the actual/current number of people belonging to the specific Target

G1: Children

Select group status: Inactive Activation cell set to 'Inactive'

≥ Lower Bound	Upper Bound
0	1
2	7
8	9
10	14
15	17

Females	Males

Ignored input cells

Note: Screenshot from the 1.1A Target Populations worksheet

Free Text Cells

Each row where data can be entered has a corresponding free text cell for adding explanations, comments, sources, or other helpful texts (Figure 21). These are needed so that other managers and users can understand the data.

Figure 21: Guide to Free Text Cells in the Legend Worksheet

Free Text Cells

Note Input cell to write comments

These notes in yellow background are not used in the calculations and are commonly located at the right side of the screen, next to the input cells (Figure 22). They can also be located above or below group of input cells (Figure 23).

Figure 22: Sample Free Text Cells Located Next to Input Cells

Projections

Select number of Periods: 15.00 Note: with this number the Number of Periods of Projections is also defined. Most often the period will be equal to a year or a month

Currency 1 (used for projections): AMD Please use 3 letter code for clarity

Currency 2: USD Please use 3 letter code for clarity

Exchange rate currency 2 → 1: 480.5000 Exchange rate of 1.00 USD to AMD

Inflation, by Period

	Expenditures	Revenues
1	0.917%	0.917%
2	2.522%	2.522%

Notes:

2016 rate

Notes: AMD = Armenian dram, USD = United States dollar. Screenshot is from the 1.0 General Assumptions worksheet.

Figure 23: Sample Free Text Cells Located Above or Below Group of Input Cells

G1: Children G2: Formal Sector

Select group status: Active Select group status: Active

≥ Lower Bound	Upper Bound	Females	Males	Females	Males
0	1	39,060	44,238		
2	7	116,431	132,242		
8	9				
10	14				
15	17				
18	19			17,317	19,405
20	24			59,033	57,374
25	29			74,666	69,402
30	34			70,613	64,468
35	39			57,969	52,752
40	44			49,957	43,380
45	49			47,935	40,064
50	54			57,832	47,403
55	59			62,419	51,250
60	63			38,056	29,586
64	69				
70	74				
75					
		155,491	176,480	535,797	475,083

Notes: Notes:

G1: Children

Group status: Active

Notes:

Age bracket	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	Period 13	Period 14	Period 15
[0 - 1]	-2.71%	-2.78%	-2.86%	-2.95%	-2.47%	-2.53%	-2.60%	-2.67%	-2.74%	-2.19%	-2.24%	-2.29%	-2.35%	-2.40%	-1.06%
[2 - 7]	-1.38%	-1.42%	-1.46%	-1.50%	-2.22%	-2.27%	-2.33%	-2.38%	-2.44%	-2.33%	-2.39%	-2.45%	-2.51%	-2.57%	-1.63%
[8 - 9]	-0.05%	-0.05%	-0.05%	-0.05%	-1.97%	-2.01%	-2.05%	-2.10%	-2.14%	-2.47%	-2.54%	-2.60%	-2.67%	-2.74%	-2.20%
[10 - 14]	2.99%	2.91%	2.82%	2.75%	0.73%	0.73%	0.72%	0.71%	0.71%	-1.97%	-2.01%	-2.06%	-2.10%	-2.14%	-2.48%
[15 - 17]	-1.04%	-1.05%	-1.07%	-1.08%	3.09%	3.00%	2.91%	2.83%	2.75%	0.74%	0.73%	0.73%	0.72%	0.72%	-1.99%

Note: Screenshot A is from the 1.1A Target Populations worksheet, while screenshot B is from the 1.1B Growth Target Populations worksheet.

Calculation Cells

The cells containing formulas where calculations take place are also color-coded as shown in (Figure 24). Locked cells mean that the contents cannot be altered without a password to unlock the sheet. This is to prevent accidental changes in the formulas that can have a great impact on the estimated outcomes. See Figures 25 to 27 for samples in the SLAM Excel file.

Figure 24: Guide to Calculation Cells in the Legend Worksheet

Calculation Cells	
<u>200.00</u>	Linked and/or Calculation cell (locked); input to cell from another tab
100.00	Calculation cell (locked)
200.00	Output cell (locked)
200.00	Cell used to (visually) check results (locked)

Buttons

Buttons in the SLAM file are also color-coded (Figure 28). Bold italics in orange means an action must be performed, for instance after cell values have been changed. Green text on a button means to add an item, and red text means to delete an item (see Figure 29 for sample buttons). Blue text on a button, meanwhile, means an option may be selected or an optional action may be performed (see Figure 30 for sample buttons).

Figure 28: Guide to Buttons in the Legend Worksheet

Buttons	
Add item	Button to perform action such as adding or deleting rows and/or columns, selecting an option or performing an action
Green text	on a button means an item is added, red text means an item is deleted
Blue text	on a button means an optional action or option .

The **add** and **delete** buttons (Figure 29) in specific inputs sheets (i.e., 1.2A Service Categories and 1.2B Health Needs) are programmed using the Microsoft Excel Visual Basic for Applications (VBA). These VBA-operated buttons prevent users from making mistakes if they were to add or remove variables themselves. The model that has been programmed in Excel is fairly complex and inadvertently adding or removing a row or column manually (without the use of VBA buttons) on one sheet has consequences on the formulas written on multiple other sheets.

Figure 29: Sample Add and Delete Buttons in Visual Basic for Applications

Sample 'Add' and 'Delete' VBA buttons		
Adding / Deleting Service Categories		
Add a Service Category - <i>Only letters allowed, case sensitive</i>	Add Item	Maximum: 30
Delete a Service Category	Delete Item	Minimum: 1
Adding Services		
Select Service Category to which Service is to be added		Maximum: 150
Add a Service	Add Item	
Deleting Services		
Select Service Category from which Service is to be deleted		Minimum: 1
Diagnosis and or treatment interventions implemented		
Delete a Service	Delete Item	

Note: Screenshot from the 1.2A Service Categories worksheet.

On the other hand, an [apply](#) button (Figure 30) found in 1.5 Revenues worksheet allows users to implement a simple distribution over age groups.

Figure 30: Sample Apply Buttons in Visual Basic for Applications

Set Group rates

Group rates can be used for households / families
Define "a typical average group" composition for each Target Group.

Number of adults: [Apply simplified distribution](#)

Number of children: [Apply simplified distribution](#)

Set age limit of "children": [Apply](#)

Set Group rates in local currency: AMD

Age group	G1: Children		G2: Formal Sector		G3: Informal Sector		G4: Disabled	
	Females	Males	Females	Males	Females	Males	Females	Males
[0 - 1]	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
[2 - 7]	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
[8 - 9]	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Simplified Actuarial Model
Applies a simple distribution over the Age groups.
Does NOT take into account distribution between Females and Males.
Does NOT take into account which Age groups are not covered.

Note: Screenshot from the 1.5 Revenues worksheet.

Tabs

Last, a guide to worksheet tabs is shown in Figure 31 and summarized in Table 2. The gray tab refers to the Legend sheet; the green tab refers to the Dashboard results; the light gold tabs refer to assumptions on general input; the light orange tabs are for assumptions on benefit packages; dark orange tabs refer to generate results; and light green tabs refer to results in tabular form.

Figure 31: Guide to Tabs in the Legend Worksheet

Tabs	
	Results: Dashboard
	Help/Explanation
	Assumptions: General input
	Assumptions: Benefit Packages
	Generate Results
	Results (locked)

Grouped Rows and Columns

In some worksheets, range of cells can be tied together so they can be collapsed or expanded. Selected rows and/or columns can be grouped using the Data>Outline>Group tab in Microsoft Excel (Figure 32).

Figure 32: The Data>Outline>Group Tab in Microsoft Excel

A worksheet has grouped cells if outline symbols **1 2**, **+**, and/or **-** are present in column or row headings of the worksheet window. In the SLAM Excel file, this is applicable to worksheets 1.2A Service Category (Figure 33), 1.2B Health Needs (Figure 34), 1.3 Health Supply–Costs (Figure 35), and 1.4 Benefit Packages (Figure 36). This is preferred as an alternative to hiding rows or columns as it remains visible where rows or columns have been grouped and hidden from view.

Figure 33: Grouped Cells in the 1.2A Service Category Worksheet

Figure 34: Grouped Cells in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence

Specify item (row number)

Add 1 Item

Delete 1 Item

14568 : Current number of items (max 20,000)

Service	per 1,000 / 10,000 / ells (warn)	Expected period events	Expected # IPD days per period
Service Category	Service provided		
1 Burn	Burn treatment cases	100,000	-
2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	-
3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	-
4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	-
5 Cardiology	Stenting with drug eluted 3 stent	100,000	-

Note: Screenshot contains hidden rows for illustration purposes only.

Figure 35: Grouped Cells in the 1.3 Health Supply—Costs Worksheet

1.3 Assumptions - Health Supply: Cost, Prices and Tariffs of Providers

Health Care Supply - Cost, Prices and Tariffs of Providers

On this Tab price lists, lists of costs and tariffs of providers may be defined.

Up to 5 different lists may be defined (each list can be activated or deactivated).

The distribution over the various providers (if more than 1) will be defined on the Tab '1.4 Benefit Packages'

Notes:

P1: Combination (Social and State)

Currency: AMD

Optional

Service	Service provided	Target population	Sex	Age bracket	Cost of Care	Cost OPD	Cost IPD
1 BUR_1	Burn treatment cases	G2: Formal Sector	Female	18 to 24	OK:		
2 CAR_1	Coronary geography (including	G2: Formal Sector	Female	18 to 24	OK:		
3 CAR_10	Drug eluted 2 stent stenting (in	G2: Formal Sector	Female	18 to 24	OK:		

Figure 36: Grouped Cells in the 1.4 Benefit Packages Worksheet

Benefit Package 1: Benefits are the same for all

Benefit Package 2: BP2

Benefit Package 3: BP3

Service	Service provided	Indicator distribution	Warning explanation	Indicative results first year
Code				Total cost OPD
1 BUR_1	Burn treatment cases	100%		- -
2 CAR_1	Coronary geography (including contrast material cost of	100%		- -
3 CAR_10	Drug eluted 2 stent stenting (in the State)	100%		- -
4 CAR_11	One Drug eluted stent two non medical eluted stent	100%		- -

Note: Screenshot contains hidden rows for illustration purposes only.

These hidden rows and columns are used only in programming purposes and are locked from the user's access (Figure 37).

Figure 37: Collapsed Cells Locked for Programming Purposes

Note: Screenshot is from the 1.2B Health Needs worksheet.

CHAPTER IV

Using the SLAM File

This chapter explains the steps on using the SLAM File per corresponding worksheet, from setting up general assumptions, choosing the target population, and up to setting up uptake and retention parameters. Viewing results, summary tables, and charts of estimates are discussed in Chapter V. Meanwhile, overview up to opening of the file is discussed in Chapter III.

The data should first be entered on the sheets on the left (excluding the Legend and the Dashboard worksheet), while working toward the sheets on the right. Specifically, the first sheet where data must be entered is the 1.0 General Assumptions worksheet and the last input sheet is the 1.6 Uptake and Retention worksheet. It is important to follow this rule working from left to right, as sheets on the right are dependent on the information entered on the sheets to the left.

In this chapter, variables and parameters are denoted in *blue italics*, buttons are described in red underlined, while emphasized information are in black underlined.

A. The 1.0 General Assumptions Input Sheet

This worksheet (Figure 38) allows setting up the *Name* and *Number of Periods* of projections, *Currencies and Exchange Rate* used for projections, *Inflation for Expenditures* and *Inflation for Revenues*, *Risk Loading* and *Administrative Loading*, *Profit Margin*, and *Discount Rate*. Specifically, this worksheet provides for inputting the following assumptions described in *Chapter II-D*:

- Assumption 1: Number of periods.
- Assumption 2: Inflation for expenditures.
- Assumption 3: Inflation for revenues.
- Assumption 4: Risk loading.
- Assumption 5: Administrative loading.
- Assumption 6: Profit margins.

Figure 38: Preview of the 1.0 General Assumptions Worksheet

1.0 General Assumptions

Projections

Select number of Periods: Note: with this number the Number of Periods of Projections is also defined. Most often the period will be equal to a year or a month.

Currency 1 (used for projections): Please use 3 letter code for clarity.

Currency 2: Please use 3 letter code for clarity.

Exchange rate currency 2 → 1: Exchange rate of 1.00 USD to AMD.

Inflation, by Period

	Expenditures	Revenues
1	0.917%	0.917%
2	2.522%	2.522%
3	2.123%	2.123%
4	2.999%	2.999%
5	3.179%	3.179%
6	3.322%	3.322%
7	3.393%	3.393%
8	3.429%	3.429%
9	3.429%	3.429%
10	3.429%	3.429%
11	3.429%	3.429%
12	3.429%	3.429%
13	3.429%	3.429%
14	3.429%	3.429%
15	3.429%	3.429%

Notes:

Risk loading: Applies to Premiums. If "N.A." then not applied.

Administrative loading: Applies to Premiums. If "Premiums", then based on the Premiums received in that Period.

Profit Margin: Applies to Positive Cashflow. Selecting "Positive Cashflow" means that the profit margin is defined as the percentage of the positive operational cash flow, while selecting "Premiums" means that the profit margin is defined as the percentage of the expected health payouts. If "N.A." is selected, then the user assumes that there is no profit margin accounted for in the analysis.

Specify periods (shows only in Dashboard):

Legend: Dashboard 1.0 General Assumptions 1.1A Target Populations 1.1B Growth Target Populations 1.2A Service Categories 1.2B 4

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells

- Input cell, unrestricted
- Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
- Input cell, select option from list

Free Text Cells

- Input cell to write comments

- Unrestricted input cells that accept alphanumeric keys;
- Restricted input cells for encoding only positive numeric values;
- Restricted input cells for selection from a drop-down list; and
- Free text cells next to input cells, for adding corresponding explanations, comments, sources, or other helpful texts pertaining to encoded information.

Number of Periods

Cell D6 allows users to *select number of periods* (Assumption 1) (Figure 39). A drop-down menu is provided for the selection of the number of periods (5, 10, or 15) that will be used in the SLAM analysis. The cell is restricted so that user will not be able to type in any values apart from those included in the drop-down list.

Figure 39: Input Cell for Select Number of Periods in the 1.0 General Assumptions Worksheet

The number selected in cell D6 will be equal to the number of periods of projections that will be used in the SLAM analysis. The user must indicate in the *Notes* column (Figure 40) the definition of the period (e.g., whether in months, quarters, or years).

Figure 40: Input Cell for Notes on Select Number of Periods in the 1.0 General Assumptions Worksheet

Currencies

The currency that will be used for projections (*Currency 1*) must be inputted in **cell D9**; another currency that can be used for conversion (*Currency 2*), if needed, must be inputted in **cell D10**. See Figure 41 for illustration.

Figure 41: Input Cells for Currencies in the 1.0 General Assumptions Worksheet

The input cells for currencies are unrestricted but it is recommended to input only the standard three-letter currency code, while document in the **Notes** column (Figure 42) the name of the currencies.

Figure 42: Input Cells for Notes on Currencies in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
8								
9		Currency 1 (used for projections)	AMD	Please use 3 letter code for clarity			Armenian Dram	
10		Currency 2:	USD	Please use 3 letter code for clarity			United States Dollar	

Exchange Rate

The official **Exchange Rate** between currencies must be inputted in **cell D12** (Figure 43), with the date of the exchange rate recorded in **cell G12** (Figure 44). The source of the data must also be entered in the **Notes** for complete documentation. Note that as per programming of restricted input cells, cell D12 will only accept numeric entries.

Figure 43: Input Cell for Exchange Rate in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
11								
12		Exchange rate currency 2 → 1	480.5000	Exchange rate of 1.00 USD to AMD			2016 rate	
13								

Figure 44: Input Cell for Notes on Exchange Rate in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
11								
12		Exchange rate currency 2 → 1	480.5000	Exchange rate of 1.00 USD to AMD			2016 rate	
13								

Inflation for Expenditures and Revenues

The expected **Inflation of Expenditures** (Assumption 2) that corresponds to the inflation of costs of the health expenditures must be inputted in **cells D15 to D29** (Figure 45). As discussed in Chapter II-D1, users may base their assumption on inflation for expenditures based on the data from the International Monetary Fund (IMF).

Figure 45: Input Cells for Inflation of Expenditures in the 1.0 General Assumptions Worksheet

A	B	C	D	E	F	G	H
14	Inflation, by Period		Expenditures	Revenues			
15		1	0.917%	0.917%			
16		2	2.522%	2.522%			
17		3	2.123%	2.123%			
18		4	2.999%	2.999%			
19		5	3.179%	3.179%			
20		6	3.322%	3.322%			
21		7	3.393%	3.393%			
22		8	3.429%	3.429%			
23		9	3.429%	3.429%			
24		10	3.429%	3.429%			
25		11	3.429%	3.429%			
26		12	3.429%	3.429%			
27		13	3.429%	3.429%			
28		14	3.429%	3.429%			
29		15	3.429%	3.429%			

Meanwhile, the expected *Inflation of Revenues* (Assumption 3) or inflation on the premiums to be paid by enrolled members must be recorded in cells **E15 to E29** (Figure 46). In the baseline scenario, it is recommended to set the premiums as increasing once per year, with the inflation based on the IMF data used in the assumed inflation for expenditures. SLAM users may also opt to set the inflation revenues to zero while keeping the inflation of expenditures increasing. The decision here should be dependent on the national laws governing the rate premium setting, if any.

Figure 46: Input Cells for Inflation of Revenues in the 1.0 General Assumptions Worksheet

A	B	C	D	E	F	G	H
14	Inflation, by Period		Expenditures	Revenues			
15		1	0.917%	0.917%			
16		2	2.522%	2.522%			
17		3	2.123%	2.123%			
18		4	2.999%	2.999%			
19		5	3.179%	3.179%			
20		6	3.322%	3.322%			
21		7	3.393%	3.393%			
22		8	3.429%	3.429%			
23		9	3.429%	3.429%			
24		10	3.429%	3.429%			
25		11	3.429%	3.429%			
26		12	3.429%	3.429%			
27		13	3.429%	3.429%			
28		14	3.429%	3.429%			
29		15	3.429%	3.429%			

Input cells for inflation expenditures and revenue are restricted to accept only numeric entries. Data sources, on the other hand, must be encoded under the *Notes* column (Figure 47). Since periods are labeled as “1” for the first period, “2” for the second period, and so on, it is recommended that the actual corresponding year/quarter/month also be recorded in the *Notes* column for complete documentation.

Figure 47: Input Cells for Notes on Inflation of Expenditures and Revenues in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
14		Inflation, by Period		Expenditures	Revenues			
15			1	0.917%	0.917%			
16			2	2.522%	2.522%			
17			3	2.123%	2.123%			
18			4	2.999%	2.999%			
19			5	3.179%	3.179%			
20			6	3.322%	3.322%			
21			7	3.393%	3.393%			
22			8	3.429%	3.429%			
23			9	3.429%	3.429%			
24			10	3.429%	3.429%			
25			11	3.429%	3.429%			
26			12	3.429%	3.429%			
27			13	3.429%	3.429%			
28			14	3.429%	3.429%			
29			15	3.429%	3.429%			

Risk Loading

The *risk loading* (Assumption 4) estimate is the increase in premium that is meant to offset increases in the health expenditures of the insurance program due to the higher risk of not knowing the actual health needs of its target population. **Cell D32** allows the users to input the expected percentage of risk loading to the premiums (Figure 48).

Figure 48: Input Cell for Risk Loading in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
31					Applies to			
32		Risk loading		0.000%	Premiums	If "N.A." then not applied		

The default setting in the SLAM File is 0.000%, which is applied to premiums as defined in the drop-down menu in **cell E32** (Figure 49). A user, however, may opt to input a positive value in cell D32 and apply it to premiums. The user may decide later to change the baseline scenario and not apply the risk loading value inputted on cell D32. Instead of deleting the risk loading value, the user may in turn select "N.A." in cell E32.

Figure 49: Input Cell for Application of Risk Loading in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
31					Applies to			
32		Risk loading		0.000%	Premiums	"N.A." then not applied		
33		Administrative		N.A.	Premiums	"Premiums", then based on the Premiums received		

The basis of the risk loading assumption must then be recorded in the **Notes** column (Figure 50)

Figure 50: Input Cell for Notes on Risk Loading in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
31					Applies to			
32		Risk loading	0.000%	Premiums	If "N.A." then not applied			

Administrative Loading

Administrative Loading (Assumption 5) is typically defined as a percentage of the expected health payouts, a fixed amount, or a combination of both. SLAM only allows users to represent the administrative costs of running the health insurance program as a percentage of premiums. Similar to the risk loading assumption, the percentage must be recorded in **cell D33** (Figure 51) and the premium must be selected from the drop-down menu provided in **cell E33** (Figure 52). The user may also choose "N.A." if the administrative loading factor will not be included in the analysis.

Figure 51: Input Cell for Administrative Loading in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
31					Applies to			
32		Risk loading	0.000%	Premiums	If "N.A." then not applied			
33		Administrative loading	0.000%	Premiums	If "Premiums", then based on the Premiums received in that Period.			

Figure 52: Input Cell for Application of Administrative Loading in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G
31					Applies to		
32		Risk loading	0.000%	Premiums	If "N.A." then not applied		
33		Administrative loading	0.000%	Premiums	Premiums", then based on the Premiums received in that Period.		
		Profit Margin	0.000%	N.A.	ecting 'Positive Cashflow' means that the profit margin is defined as the percentage of the positive operational cash flow, while selecting 'Premiums'		

The basis of the administrative loading assumption must then be recorded in the **Notes** column (Figure 53).

Figure 53: Input Cell for Notes on Administrative Loading in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
31					Applies to			
32		Risk loading	0.000%	Premiums	If "N.A." then not applied			
33		Administrative loading	0.000%	Premiums	If "Premiums", then based on the Premiums received in that Period.			

Profit Margin

The **Profit Margin** (*Assumption 6*) must be recorded as a percentage in **cell D34** (Figure 54), while the factor on how it is defined and calculated must be selected from the drop-down menu in **cell E34** (Figure 55). Cells D32 to D34 are restricted to only accept numeric entries, while cells E32 to E34 are limited to the options listed in the drop-down menus.

Figure 54: Input Cell for Profit Margin in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G
31					Applies to		
32		Risk loading		0.000%	Premiums	If "N.A." then not applied	
33		Administrative loading		0.000%	Premiums	If "Premiums", then based on the Premiums received in that Period.	
		Profit Margin		0.000%	Positive Cashflow	Selecting 'Positive Cashflow' means that the profit margin is defined as the percentage of the positive operational cash flow, while selecting 'Premiums' means that the profit margin is defined as the percentage of the expected health payouts. If 'N.A.' is selected, then the user assumes that there is no profit margin accounted for in the analysis.	
34							

Figure 55: Input Cell for Application of Profit Margin in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G
31					Applies to		
32		Risk loading		0.000%	Premiums	If "N.A." then not applied	
33		Administrative loading		0.000%	Premiums	If "Premiums", then based on the Premiums received in that Period.	
		Profit Margin		0.000%	Positive Cashflow	Selecting 'Positive Cashflow' means that the profit margin is defined as the percentage of the positive operational cash flow, while selecting 'Premiums' means that the profit margin is defined as the percentage of the expected health payouts. If 'N.A.' is selected, then the user assumes that there is no profit margin accounted for in the analysis.	
34							
35					N.A. Premiums Positive Cashflow		
36		Specify periods (shows only in Dashboard)					

Selecting positive cashflow means that the profit margin is defined as the percentage of the positive operational cash flow, while selecting premiums means that the profit margin is defined as the percentage of the expected health payouts. If “N.A.” is selected, then the user assumes that there is no profit margin accounted for in the analysis.

The basis of the profit margin assumption must then be recorded in the **Notes** column (Figure 56).

Figure 56: Input Cell for Notes on Administrative Loading in the 1.0 General Assumptions Worksheet

	B	C	D	E	F	G	H
31				Applies to			
32		Risk loading		0.000%	Premiums	If "N.A." then not applied	
33		Administrative loading		0.000%	Premiums	If "Premiums", then based on the Premiums received in that Period.	
		Profit Margin		0.000%	Positive Cashflow	Selecting 'Positive Cashflow' means that the profit margin is defined as the percentage of the positive operational cash flow, while selecting 'Premiums' means that the profit margin is defined as the percentage of the expected health payouts. If 'N.A.' is selected, then the user assumes that there is no profit margin accounted for in the analysis.	
34							

Name of Period

The **Name of Period** that will be used to define periods 1–15 must be recorded in **cells D37 to D51** (Figure 57). The identified labels will be displayed only in the Dashboard.

Figure 57: Input Cells for Name of Period in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
36		Specify periods (shows only in Dashboard)						
37			1	2017				
38			2	2018				
39			3	2019				
40			4	2020				
41			5	2021				
42			6	2022				
43			7	2023				
44			8	2024				
45			9	2025				
46			10	2026				
47			11	2027				
48			12	2028				
49			13	2029				
50			14	2030				
51			15	2031				

Further details and information about the label of periods must then be recorded in the **Notes** column for documentation (Figure 58).

Figure 58: Input Cells for Notes on Name of Period in the 1.0 General Assumptions Worksheet

	A	B	C	D	E	F	G	H
36		Specify periods (shows only in Dashboard)						
37			1	2017				
38			2	2018				
39			3	2019				
40			4	2020				
41			5	2021				
42			6	2022				
43			7	2023				
44			8	2024				
45			9	2025				
46			10	2026				
47			11	2027				
48			12	2028				
49			13	2029				
50			14	2030				
51			15	2031				

Discount Rate

For the scenario analysis (see Chapter VI), users may set a **Discount Rate** to estimate discounted cash flows in reviewing insurance premiums. **Cell D53** (Figure 59) provides the input cell to define the said discount rate.

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells	
<input type="text" value="100.00"/>	Input cell, unrestricted
<input type="text" value="100.00"/>	Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
<input type="text" value="100.00"/>	Input cell <i>contents ignored</i> (not included in calculations)
<input type="text" value="Inactive"/>	Activation cell - choose from drop down menu, color changes accordingly
Free Text Cells	
<input type="text" value="Note"/>	Input cell to write comments
Calculation Cells	
<input type="text" value="100.00"/>	Calculation cell (locked)

- Unrestricted input cells that accept alphanumeric keys;
- Restricted input cells for encoding only positive numeric values;
- Ignored input cells where entries are not considered in calculations and analyses;
- Activation cells which activate or inactive parameters;
- Free text cells, below input cells, for adding corresponding explanations, comments, sources, or other helpful texts pertaining to the encoded information; and
- Output cells that are locked for editing and show results of calculations within the worksheet.

Target Groups and Status

Row 10 provides the input cells for Assumptions 9–14 to define the name of the *target groups* that belong to the target population identified in Assumption 7 (Figure 61). Up to six Target Population groups may be specified. The following groups are specified in the current SLAM Excel file:

- Group 1: Children
- Group 2: Formal Sector
- Group 3: Disabled
- Group 4: Pensioners
- Group 5: State Order–Others
- Group 5: Everyone Else

Figure 61: Input Cells for Name of Target Groups in the 1.1A Target Populations Worksheet

D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
9	are the actual/current number of people belonging to the specific Target Population:																	
10	G1: Children	G2: Formal Sector	G3: Disabled	G4: Pensioners	G5: State Order - Others	G6: Everyone Else												
11	Select group status:	Simple Linear Actuarial Model Provide a Name for the Target Population	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active			
12	Females		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males			
13	39,060																	

Row 12, meanwhile, allows for the determination of **Group Status** (Figure 62) and whether the said target group will be included in the projections (active) or not taken into account (inactive).

Figure 62: Input Cells for Group Status of Target Groups in the 1.1A Target Populations Worksheet

D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
9	are the actual/current number of people belonging to the specific Target Population:																	
10	G1: Children	G2: Formal Sector	G3: Disabled	G4: Pensioners	G5: State Order - Others	G6: Everyone Else												
11	Select group status:	Active	Select whether Target Population is Active (i.e. included in projections) or Inactive (not taken into account)	Select group status:	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active	Select group status:	Active			
12	Females	Active		Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males			
13	39,060	44,238																
14	116,431	132,242																

As discussed in Assumptions 15 and 16, target groups may also overlap. The analyst, however, must make it clear in the 1.4 Benefit Packages worksheet (Figure 63; pg. 78 for discussion) who is eligible for which health insurance packages. For example, the user may define that the formal sector group can include the disabled State Order (others).

Figure 63: Selection of Target Population per Service in 1.4 Benefit Packages Worksheet

	A	B	C	D	E	F	G	H
1	1.4 Assumptions - Benefit Packages Definition							
2								
3	Benefit Package Definition							
4	On this Tab define: (1) Whether Service is included in one or more Benefit Packages; (2) Where enrollees utilize Services (distribution in % over up to 5 providers); (5) Whether the enrollee can access inpatient and / or outpatient services or both)							
5	Note: selecting IPD (Inpatient) and / or OPD (Outpatient) only makes sense if costs for each specified on Tab 1.3.							
6								
7								
8	Benefit Package 1:	Benefits are the same for all						ATTENTION: within a Benefit Package there should be no overlap in Target Populations for a same Service Include Service in Benefit Package(s)?
9	Benefit Package 2:	BP2						
10	Benefit Package 3:	BP3						
11								
12								
13								
14	Service		Defined Target Populations					
15	Code	Service provided	Target group	Sex	Age group			
17	1 BUR_1	Burn treatment cases	G2: Formal Sector	Female	18 to 24	All		
18	2 CAR_1	Coronary geography (including contrast material cost of	G2: Formal Sector	Female	18 to 24	All		

There are two ways to prevent double counting in case of nonmutually exclusive groups. First is to set applicable target group as inactive in this worksheet (Figure 64). Should the user decide to exclude a group in the analysis (i.e., the group status is changed from active to inactive), the entries in the population distribution will be ignored by changing the font color into white, and the input cells into gray.

Figure 64: Inactivation of a Target Population 1.1A Target Populations Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S					
9	Note: These numbers are the actual current number of people belonging to the specific Target Population.																							
10	G1: Children					G2: Formal Sector					G3: Disabled				G4: Pensioners				G5: State Order - Others					
11	Select group status: <input type="button" value="Inactive"/>					Select group status: <input type="button" value="Active"/>					Select group status: <input type="button" value="Active"/>				Select group status: <input type="button" value="Active"/>				Select group status: <input type="button" value="Active"/>					
12	a Lower Bound		c Upper Bound		Females		Males		Females		Males		Females		Males		Females		Males		Females		Males	
13																								
14																								
15	0		1																					
16	2		7																					
17	8		9																					
18	10		14																					
19	15		17																					
20	18		19						17,317		19,405		147		314						3,226		3,615	
21	20		24						59,033		57,374		1,171		2,771						10,997		10,688	
22	25		29						74,666		69,402		1,736		3,903						13,909		12,929	
23	30		34						70,613		64,468		2,229		4,990						13,154		12,009	
24	35		39						57,969		52,752		2,860		5,218						10,799		9,827	
25	40		44						49,957		43,380		3,892		5,953						9,306		8,081	
26	45		49						47,935		40,064		5,911		6,842						8,930		7,463	
27	50		54						57,832		47,403		11,500		11,583						10,773		8,830	
28	55		59						62,419		51,250		18,528		16,139						11,628		9,547	
29	60		63						38,056		29,586		14,686		11,532						7,089		5,511	
30	64		69																					
31	70		74																					
32	75																							
33																								
34									535,797		475,083		62,659		69,245		218,877		145,809		99,811		88,500	

Second, set a target group as “No” in the “Include in analysis” column of the Dashboard (Figure 65; see *pg. 115* for discussion).

Figure 65: Inactivation of a Target Population in the Dashboard Worksheet

	A	B	C	D
10	Target Population Projections			
11				
12			Target Group Size (end of period)	
13	Target Groups	Include in analysis?	2017	2031
14	G1: Children	No	326,075	235,641
15	G2: Formal Sector	Yes	1,000,786	923,925
16	G3: Disabled	Yes	131,408	123,081
17	G4: Pensioners	Yes	371,696	538,484
18	G5: State Order - Others	Yes	186,432	172,114
19	G6: Everyone Else	Yes	0	0
20				
21			2,016,397	1,993,240

The screenshot shows an Excel spreadsheet with columns labeled A through S and rows numbered 10 through 21. Rows 16 and 17 are highlighted in yellow. In row 17, under the column headers "Lower Bound" and "Upper Bound", the values 5 and 9 are entered. An orange error message box from Microsoft Excel is overlaid on the spreadsheet, displaying the text: "Please set a Lower Bound and lower than the Upper Bound for the same age bracket and lower than the Upper Bound of the previous age bracket (empty = 0)". The error box includes buttons for "Betry", "Cancel", and "Hjelp".

Meanwhile, the cells in column C are restricted to ensure that the upper bound of an age group is not lower than the recorded lower (Figure 68).

Figure 68: Restrictions to Upper Bound of Age Groups in the 1.1A Target Populations Worksheet

The screenshot shows a Microsoft Excel spreadsheet with a table of data. The table has columns for 'Lower Bound' and 'Upper Bound' for three groups: 'Children', 'Formal Sector', and 'Disabled'. The data is organized by gender ('Females' and 'Males') for each group. An error message box is displayed over the table, stating: 'Please set an Upper Bound and higher than the Lower Bound (empty = over 100)'. The error message is triggered by the data for the 'Formal Sector' group, where the 'Lower Bound' is 8 and the 'Upper Bound' is 7.

	Children		Formal Sector		Disabled	
	Females	Males	Females	Males	Females	Males
1	0	1				
2	2	7				
3	8	7				
4	10	14				
5	15	17				
6	18	19				
7	20	24				
			59.033	57.374	1.171	2.771

Sex

The population distribution by identified **Age Bracket** and **Sex** must be recorded in **rows 15–32** (Figure 69), specifically **cells F and G** for **Target Group 1**; **cells I and J** for **Target Group 2**; **cells L and M** for **Target Group 3**; **cells O and P** for **Target Group 4**; **cells R and S** for **Target Group 5**; and **cells U and V** for **Target Group 6**. These input cells which must be consistent with Assumptions 9 to 14 are restricted to accept positive numeric values only. For example, a pregnant women group should only be limited to women of reproductive age (15–49 years), or “Seniors” should be restricted to persons at least 60 years old.

Figure 69: Input Cells for Population Distribution by Age Group and Sex in the 1.1A Target Populations Worksheet

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V					
9	Please, not the numbers of (potentially) enrolled members																							
10	G1: Children				G2: Formal Sector				G3: Disabled				G4: Pensioners				G5: State Order - Others				G6: Everyone Else			
11	Select group status: Active				Select group status: Active				Select group status: Active				Select group status: Active				Select group status: Active				Select group status: Active			
12																								
13																								
14	Females		Males		Females		Males		Females		Males		Females		Males		Females		Males		Females		Males	
15	39,060		44,238																					
16	116,431		132,242																					
17																								
18																								
19																								
20					17,317		19,405				147		314				3,226		3,615					
21					59,033		57,374				1,171		2,771				10,997		10,688					
22					74,666		69,402				1,736		3,903				13,909		12,929					
23					70,613		64,468				2,229		4,990				13,154		12,009					
24					57,969		52,752				2,860		5,218				10,799		9,827					
25					49,957		43,380				3,892		5,953				9,306		8,081					
26					47,935		40,064				5,911		6,842				8,930		7,463					
27					57,832		47,403				11,500		11,583				10,773		8,830					
28					62,419		51,250				18,528		16,139				11,628		9,547					
29					38,056		29,586				14,686		11,532				7,089		5,511					
30																								
31																								
32																								
33																								
34	155,491		176,480		535,797		475,083		62,659		69,245		218,877		145,389		99,811		88,501					

The **Population totals by sex per group** are then automatically computed in **row 34** (Figure 70).

Figure 70: Population Totals by Sex per Target Group in the 1.1A Target Populations Worksheet

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
9	able, not the numbers of (potentially) enrolled members																		
10	G1: Children			G2: Formal Sector			G3: Disabled			G4: Pensioners			G5: State Order - Others			G6: Everyone Else			
12	Select group status: Active			Select group status: Active			Select group status: Active			Select group status: Active			Select group status: Active			Select group status: Active			
14	Females		Males	Females		Males	Females		Males	Females		Males	Females		Males	Females		Males	
15	39,060		44,238																
16	116,431		132,242																
17																			
18																			
19																			
20				17,317		19,405	147		314				3,226		3,615				
21				59,033		57,374	1,171		2,771				10,997		10,688				
22				74,666		69,402	1,736		3,903				13,909		12,929				
23				70,613		64,468	2,229		4,990				13,154		12,009				
24				57,969		52,752	2,860		5,218				10,799		9,827				
25				49,957		43,380	3,892		5,953				9,306		8,081				
26				47,935		40,064	5,911		6,842				8,930		7,463				
27				57,832		47,403	11,500		11,583				10,773		8,830				
28				62,419		51,250	18,528		16,139				11,628		9,547				
29				38,056		29,586	14,686		11,532				7,089		5,511				
30																			
31																			
32																			
33																			
34	155,491		176,480	535,797		475,083	62,659		69,245	218,877		145,389	99,811		88,501				

On the other hand, **row 37** provides for space where users can indicate **Notes** per target group. Automatic graphs for the defined target populations showing the breakdown by age group and by sex are also available below the **Notes** section. See Figure 71 for illustration.

Figure 71: Notes and Graphs on Population of Target Groups in the 1.1A Target Populations Worksheet

B. The 1.1B Growth Target Populations Input Sheet

This worksheet allows setting up of **Growth Rates** of the specific **Age Bracket** and **Sex** of people in each Target Group for all periods to be included in the projections (Figure 72). Specifically, this worksheet provides for inputting *Assumption 17 (Growth Rates of Subpopulations)* described in Chapter II-D.

As noted in Chapter II-D4, these rates should not yet include dropout rates in the membership of these targeted groups. Growth rates in Period 1 will be applied to project the population size at the end of Period 1, and so forth.

Figure 72: Preview of the 1.1B Growth Target Populations Worksheet

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells	
100.00	Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
Free Text Cells	
Note	Input cell to write comments
Calculation Cells	
200.00	Linked and/or Calculation cell (locked); input to cell from another tab

- Restricted input cells for encoding only positive numeric values;
- Free text cells for adding corresponding explanations, comments, sources, or other helpful texts pertaining to the encoded information; and
- Linked calculation cells (i.e., age bracket) that are locked and entries came from another tab.

The **Number of years of projections** in **cell E3** is automatically picked up from the **Number of Period** defined in the 1.0 General Assumptions worksheet (Figure 73).

**Figure 73: Input Cell for Number of Years of Projections
in the 1.1B Growth Target Populations Worksheet**

The worksheet is then divided into the following six sections representing the six **target groups**:

- **Rows 14–63** for Target Group 1 (Figure 74);
- **Rows 64–113** for Target Group 2 (Figure 75);
- **Rows 114–163** for Target Group 3 (Figure 76);
- **Rows 164–213** for Target Group 4 (Figure 77);
- **Rows 214–263** for Target Group 5 (Figure 78); and
- **Rows 264–313** for Target Group 6 (Figure 79).

Figure 74: Section for Target Group 1 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

Figure 75: Section for Target Group 2 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

Figure 76: Section for Target Group 3 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

Figure 77: Section for Target Group 4 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

Figure 78: Section for Target Group 5 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

Figure 79: Section for Target Group 6 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

The title of each section (**rows 14, 64, 114, 164, 214, and 264**) represents the name of **target groups** automatically up picked from the 1.1A Target Populations” worksheet (Figure 80).

Figure 80: Name of Target Group 1.1B Target Growth Populations Worksheet

	A	B	C	D	E	F	G	H	N	O	P	Q	R
5													
6				Target Groups - Growth rate of age and sex brackets									
7				These are the growth rates of the specific sex and age brackets of people in each Target Group.									
8				Growth rates may be specified for 5, 10 or 15 periods.									
9				Sources may be the World Bank or National bureaus of Statistics									
10				Note 1: Verify if groups overlap.									
11				Note 2: these are the 'living' people, not the numbers of (potentially) enrolled members									
12				Note 3: Growth rates in Period 1 will be applied to project the population size at the end of Period 1, and so forth.									
13													
14				G1: Children									
15													
16				Notes:									
17			Group status	Active	Defined on '1.1A Target Populations'								
18													
19				Females									

The **Group Status** (cells C17, C67, C117, C167, C217, and C267) of each **target group** is also derived from the 1.1A Target Populations worksheet (Figure 81). If the user defined the group as part of the projections, it is labeled as active. Otherwise, it will be noted as inactive.

Figure 81: Linked Cell for Group Status in the 1.1B Target Growth Population Worksheet

	A	B	C	D	E	F	G	H	N	O	P	Q	R
13													
14			G1: Children										
15													
16			Notes:										
17			Group status	Active									
18					Defined on '1.1A Target Populations'								
19													
20			Age bracket		Period 2	Period 3	Period 4	Period 5	Period 11	Period 12	Period 13	Period 14	Period 15
22	1		[0 - 1]		-2.78%	-2.86%	-2.95%	-2.47%	-2.24%	-2.29%	-2.35%	-2.40%	-1.06%
23	2		[2 - 7]		-1.38%	-1.42%	-1.46%	-1.50%	-2.22%	-2.39%	-2.45%	-2.51%	-1.63%

A **Notes** cell next to the activation cell is provided for the user to input any remarks (Figure 82).

Figure 82: Notes on Group Status in the 1.1B Target Growth Population Worksheet

	A	B	C	D	E	F	G	H	N	O	P	Q	R	
13				G1: Children										
14														
16				Notes:										
17			Group status	Active										
19				Females										
20			Age bracket		Period 1	Period 2	Period 3	Period 4	Period 5	Period 11	Period 12	Period 13	Period 14	Period 15
22	1		[0 - 1]		-2.71%	-2.78%	-2.86%	-2.95%	-2.47%	-2.24%	-2.29%	-2.35%	-2.40%	-1.06%
23	2		[2 - 7]		-1.38%	-1.42%	-1.46%	-1.50%	-2.22%	-2.39%	-2.45%	-2.51%	-2.57%	-1.63%
24	3		[8 - 9]		-0.05%	-0.05%	-0.05%	-0.05%	-1.97%	-2.54%	-2.60%	-2.67%	-2.74%	-2.20%
25	4		[10 - 14]		2.99%	2.91%	2.82%	2.75%	0.73%	-2.01%	-2.06%	-2.10%	-2.14%	-2.48%
26	5		[15 - 17]		-1.04%	-1.05%	-1.07%	-1.08%	3.09%	0.73%	0.73%	0.72%	0.72%	-1.99%

Age Bracket defined in the 1.1A Target Populations worksheet is automatically provided in **column B** for all target groups (Figure 83).

Figure 83: Age Bracket in the 1.1B Target Growth Population Worksheet

Separate panels for growth rates of females (**upper panel**) and males (**lower panel**) for all periods of projections are encoded under **column D** for Period 1, **column E** for Period 2, and so on, up to **column R** for Period 15 (Figure 84). The input cells for growth rates are restricted to accept only numeric entries.

Figure 84: Panels for Growth Rates per Sex for Females (Upper) and Males (Lower) by Age Bracket in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

Column bars (Figure 85) showing the projected target population for the defined periods by **Sex** and **Age Bracket** are provided in the right side of the panels for growth rates.

Figure 85: Column Bars on Projected Target Population for Defined Periods by Sex and Age Bracket in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

If a group is declared as inactive in worksheet 1.1A Target Populations, the previous entries in the 1.1B Growth Target Populations worksheet for the same group will be automatically hidden and the projected entries in the graph will not be shown (Figure 86).

Figure 86: Sample Inactivated Data for Target Group 1 in the 1.1B Target Growth Populations Worksheet

Note: Screenshot contains hidden rows and columns for illustration purposes only.

C. The 1.2A Service Categories Input Sheet

This worksheet (Figure 87) allows for adding, defining, and deleting **Service Categories** (e.g., general surgery, cardiology, gynecology) and **Services** (e.g., appendectomy, burn treatment). It shows the list of services provided to the members of the health insurance program, and all health services are classified by health category. Specifically, this worksheet provides for inputting *Assumption 18 (Health Categories)* described in Chapter II-D.

Figure 87: Preview of the 1.2A Service Categories Worksheet

Service Categories	Short Code	Number of Services
General surgery	SUR	47
Diagnosis_and_or_treatment_interventions_implemented	DTI	21
Maxillofacial_surgery_and_nose_throat_ear_surgery	MES	42
Cardiology	CAR	14
Gynecology	GYN	16
Hospital_care_with_short_term_or_small_volumes_or_low_co	HOS	6
Neurosurgical_operations	NEU	12
Oncology	ONC	3
Ophthalmology	OPH	21
Proctology	PRO	38
Resuscitation_and_intensive_care	RIC	5
Small_surgical_interventions_that_require_no_daily_hospital	SMA	15
Therapy	THE	8
Thoracic_surgery	THO	13
Transplantation_and_orthopedics	TDA	47

The drop-down lists in this worksheet are automatically updated once data lists are edited. For instance, when a “Sample Category” was added using the **Add Item** button in the **Add a Service Category**, the **Delete a Service Category** automatically included “Sample_Category” in the list (Figure 88).

Figure 88: Drop-Down Lists Automatically Updated with Sample Category

TAKE NOTE

In case the user is editing a SLAM Excel file version that already had filled entries in the 1.2B Health Needs, the user must review the Health Needs entries that are related to the edited health services in the 1.2A Service Categories worksheet.

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells	
<input type="text" value="100.00"/>	Input cell, unrestricted
<input type="text" value="100.00"/>	Input cell, select option from list
Free Text Cells	
<input type="text" value="Note"/>	Input cell to write comments
Buttons	
<input type="button" value="Add item"/>	Button to perform action such as adding or deleting rows and/or columns, selecting an option or performing an action
Green text on a button means an item is added, red text means an item is deleted	

- Unrestricted input cells that accept alphanumeric keys;
- Restricted input cells for selection from a drop-down list;
- Free text cells for adding corresponding explanations, comments, sources, or other helpful texts pertaining to encoded information; and
- Buttons with green text for adding an item, and buttons with red text for deleting an item.

SUMMARY REMINDERS FOR OPENING THE SLAM EXCEL FILE

Microsoft Excel Visual Basic for Applications (VBA) operates via buttons [add](#) and [delete](#) in this worksheet to prevent users from making mistakes if they try to add or remove variables. The model that has been programmed in Excel is fairly complex and inadvertently adding or removing a row or column manually (without using VBA buttons) on one sheet has consequences on the formulas written on multiple other sheets.

Service Categories

The SLAM Excel file has 22 default **Service Categories** summarized in the **Service Categories** section of the worksheet, specifically **row 29** (Section Header) to **row 55** (Total Services) (Figure 89). A line number in blue font color next to the service categories is in place for reference.

Figure 89: Service Categories Summary List Section in the 1.2A Service Categories Worksheet

	A	B	C	D	E
29	Service Categories				
30					
31	1	Service Categories	Short Code	Number of Services	
32	2	General_surgery	SUR	47	
33	3	Diagnosis_and_or_treatment_interventions_implemented	DTI	21	
34	4	Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	MES	42	
35	5	Cardiology	CAR	14	
36	6	Gynecology	GYN	16	
37	7	Hospital_care_with_short_term_or_small_volumes_or_low_cost	HOS	6	
38	8	Neurosurgical_operations	NEU	12	
39	9	Oncology	ONC	3	
40	10	Ophthalmology	OPH	21	
41	11	Proctology	PRO	38	
42	12	Reanimation_and_intensive_care	RIC	5	
43	13	Small_surgical_interventions_that_require_no_daily_hospital_care	SMA	15	
44	14	Therapy	THE	8	
45	15	Thoracic_Surgery	THO	13	
46	16	Traumatology_and_orthopedy	TRA	67	
47	17	Urology	URO	49	
48	18	Vascular_interventions	VAS	17	
49	19	Costly_Diagnostic_Tests	CDT	12	
50	20	Burn	BUR	1	
51	21	State_Order_Services	XXX	56	
52	22	State_Order_Services_two	XX2	143	
53	23	State_Order_Services_three	XX3	1	
54					
55	Total services			607	

Users may add or delete more service categories in the **Adding/Deleting Service Categories** section of the worksheet (Figure 90). Up to 30 service categories may be inputted while minimum requirement is one category. For each category, at least one health service must be defined.

Figure 90: The Adding/Deleting Service Categories Section in the 1.2A Service Categories Worksheet

3	1.2A Health Needs - Expected incidence / prevalence			
4	On this tab the Service Categories and its subsets are defined. After making changes to any of the categories, check all of the Health Needs which related to the changes cells. Excel does not automatic			
5				
6	Adding / Deleting Service Categories			
7	Add a Service Category - Only letters allowed, case sensitive			Notes:
8	<input type="text"/>	<input type="button" value="Add Item"/>	Maximum: 30	<input type="text"/>
9				
10	Delete a Service Category			
11	<input type="text"/>	<input type="button" value="Delete Item"/>	Minimum: 1	<input type="text"/>
12

TAKE NOTE

Users must be careful in using the **add** and **delete** VBA buttons since “Undo” or “CTRL+Z” does not work with these macros.

To add a new service category: (i) the user must input the name of the category in **cell B8** (e.g., Emergency Services) and then (ii) click the **Add Item** button beside it (Figure 91).

Figure 91: Steps in Adding a New Service Category in the 1.2A Service Categories Worksheet

The screenshot shows the '1.2A Health Needs - Expected incidence / prevalence' worksheet. The 'Adding / Deleting Service Categories' section is highlighted. In cell B8, 'Emergency Services' is entered. The 'Add Item' button is highlighted with a red box and a mouse cursor. The 'Delete a Service Category' section is also visible, with a 'Delete Item' button. The 'Add a Service Category' section has a note: 'Add a Service Category - Only letters allowed, case sensitive'. The 'Delete a Service Category' section has a note: 'Text only (limit length)'. The 'Maximum: 30' and 'Minimum: 1' values are shown on the right.

A dialog box will then be displayed and the user should click **OK** (Figure 92).

Figure 92: Message Box after Adding a New Service Category in the 1.2A Service Categories Worksheet

The screenshot shows the same worksheet as Figure 91, but with a message box titled 'Generic Actuarial Model' displayed. The message box contains the text 'Service Category name = Emergency_Services' and an 'OK' button. The 'Add Item' button in the worksheet is still highlighted with a red box and a mouse cursor.

The user will then be instructed to assign a 3-character code (e.g., EMR) in the next dialog box and click **OK** (Figure 93).

Figure 93: Assigning a 3-Character Code for the Added Service Category in the 1.2A Service Categories Worksheet

The screenshot shows the same worksheet as Figure 92, but with a message box titled 'Generalized Linear Actuarial Model' displayed. The message box contains the text 'Service Category name = Emergency_Services' and an 'OK' button. The 'Add Item' button in the worksheet is still highlighted with a red box and a mouse cursor.

The number of service categories increased from 22 to 23, and the new category will now be displayed in the **Service Categories** section (Figure 94). Note that the SLAM program will automatically provide one healthcare service under the newly added service category. Also notice that there will be movement of rows as more service categories are added (i.e., the row for Total Services became **row 56** instead of the default row 55).

Figure 94: New Service Category Added in the Service Categories Summary List of the 1.2A Service Categories Worksheet

A	B	C	D
29	Service Categories		
30			
31	0 Service Categories	Short Code	Number of Services
32	1 General_surgery	SUR	47
33	2 Diagnosis_and_or_treatment_interventions_implemented	DTI	21
34	3 Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	MES	42
35	4 Cardiology	CAR	14
36	5 Gynecology	GYN	16
37	6 Hospital_care_with_short_term_or_small_volumes_or_low_cost	HOS	6
38	7 Neurosurgical_operations	NEU	12
39	8 Oncology	ONC	3
40	9 Ophthalmology	OPH	21
41	10 Proctology	PRO	38
42	11 Reanimation_and_intensive_care	RIC	5
43	12 Small_surgical_interventions_that_require_no_daily_hospital_care	SMA	15
44	13 Therapy	THE	8
45	14 Thoracic_Surgery	THO	13
46	15 Traumatology_and_orthopedy	TRA	67
47	16 Urology	URO	49
48	17 Vascular_interventions	VAS	17
49	18 Costly_Diagnostic_Tests	CDT	12
50	19 Burn	BUR	1
51	20 State_Order_Services	XXX	56
52	21 State_Order_Services_two	XX2	143
53	22 State_Order_Services_three	XX3	1
54	23 Emergency_Services	EMR	1
55			
56	Total services		608

The new healthcare service (e.g., short code “EMR_1”) will be displayed at the end of existing rows (e.g., **row 666**, or **line number 608**) in the “List of services” section. Since the user has yet to define a specific health service under the new category, it is automatically labeled as “Please replace with Service name.” See Figure 95 for illustration.

Figure 95: New Health Service Under the List of Services Section of the 1.2A Service Categories Worksheet

A	B	C	D	E	F
650	592 XX2_130	State_Order_Services_two	Tonsillectomy, adenoidectomy General anesthesia		
651	593 XX2_131	State_Order_Services_two	Tonsillectomy, adenoidectomy general anesthesia / adult /		
652	594 XX2_132	State_Order_Services_two	Tonsillectomy, adenoidectomy local anesthetic		
653	595 XX2_133	State_Order_Services_two	Tonsillectomy, adenoidectomy local anesthesia / adult /		
654	596 XX2_134	State_Order_Services_two	Small metal constructions, cloves platform, platform forearm, collarbone platform (for everyone)		
655	597 XX2_135	State_Order_Services_two	Minor surgical interventions / adult /		
656	598 XX2_136	State_Order_Services_two	Kidney stone lithotripsy through (up to 4,000 stroke)		
657	599 XX2_137	State_Order_Services_two	Otolaryngological		
658	600 XX2_138	State_Order_Services_two	Otolaryngological /adult/		
659	601 XX2_139	State_Order_Services_two	Otolaryngological day cre / adult /		
660	602 XX2_140	State_Order_Services_two	Orthopedic		
661	603 XX2_141	State_Order_Services_two	Orthopedic / adult /		
662	604 XX2_142	State_Order_Services_two	Orthopedic, surgical intervention		
663	605 XX2_143	State_Order_Services_two	Orthopedic day care /adult/		
664	606 XX2_144	State_Order_Services_two	Pustular surgery (including blood sowing established sepsis) / adult /		
665	607 XX3_?	State_Order_Services_three	General Surgical /adult/1.08/		
666	608 EMR_1	Emergency_Services	Please replace with Service name		
667					

Note: The screenshot above contains hidden rows for illustration purposes only.

To assign a new name for the corresponding health service under the new service category, the user may directly edit the cell by replacing the “Please replace with Service name” with for instance, “Accident/Trauma.” See Figure 96 for illustration.

Figure 96: Assigning Name for New Health Service in 1.2A Service Categories Worksheet

	A	B	C	D	E	F
650	592	XX2_130	State_Order_Services_two	Tonsillectomy, adenoidectomy General anesthesia		
651	593	XX2_131	State_Order_Services_two	Tonsillectomy, adenoidectomy general anesthesia / adult /		
652	594	XX2_132	State_Order_Services_two	Tonsillectomy, adenoidectomy local anesthetic		
653	595	XX2_133	State_Order_Services_two	Tonsillectomy, adenoidectomy local anesthesia / adult /		
654	596	XX2_134	State_Order_Services_two	Small metal constructions, cloves platform, platform forearm, collarbone platform (for everyone)		
655	597	XX2_135	State_Order_Services_two	Minor surgical interventions / adult /		
656	598	XX2_136	State_Order_Services_two	Kidney stone lithotripsy through (up to 4,000 stroke)		
657	599	XX2_137	State_Order_Services_two	Otolaryngological		
658	600	XX2_138	State_Order_Services_two	Otolaryngological /adult/		
659	601	XX2_139	State_Order_Services_two	Otolaryngological day cre / adult /		
660	602	XX2_140	State_Order_Services_two	Orthopedic		
661	603	XX2_141	State_Order_Services_two	Orthopedic / adult /		
662	604	XX2_142	State_Order_Services_two	Orthopedic, surgical intervention		
663	605	XX2_143	State_Order_Services_two	Orthopedic day care /adult/		
664	606	XX2_144	State_Order_Services_two	Pustular surgery (including blood sowing established sepsis) / adult /		
665	607	XX3_2	State_Order_Services_three	General Surgical /adult/1.08/		
666	608	EMR_1	Emergency_Services	Accident/Trauma		

Note: Screenshot contains hidden rows for illustration purposes only.

To delete a service category: (i) the user must select the name of the category (e.g., “Emergency Services”) from the drop-down menu of **cell B11** and then (ii) click the **Delete Item** button beside it (Figure 97).

Figure 97: Deleting a Service Category in the 1.2A Service Categories Worksheet

1.2A Health Needs - Expected incidence / prevalence

On this tab the Service Categories and it subsets are defined. After making changes to any of the categories, check all of the Health Needs which related to the changes

Adding / Deleting Service Categories

Add a Service Category - Only letters allowed, case sensitive

Add Item

Maximum: 30

Delete a Service Category

11

Vascular_interventions

(A) Select from drop-down menu

Delete Item

(B) Click 'Delete Item'

Minimum: 1

Maximum: 150

Notes:

A dialog box will then be displayed and the user should click **OK** (Figure 98). Clicking the exit (X) button in the upper left corner of the dialog box **will still delete** the selected service category.

Figure 98: Message Box After Deleting a Service Category in the 1.2A Service Categories Worksheet

The deleted category will no longer be found in the “Delete a Service Category” drop-down menu of “Adding/Deleting Service Categories” section or displayed in the “Service Categories” section; corresponding health services under the deleted category will no longer be seen in the “List of Services” section (Figure 99).

Figure 99: Emergency Services Category Removed in the 1.2A Service Categories Worksheet

1.2A Health Needs - Expected incidence / prevalence			
On this tab the Service Categories and it subsets are defined. After making changes to any of the categories, check all of the Health Needs which related to the changes cells. Excel does not automatically up			
Adding / Deleting Service Categories			
Add a Service Category - Only letters allowed, case sensitive		Notes:	
Delete a Service Category		Maximum: 30	
Emergency_Services		Minimum: 1	
Select Service Category to which S		Maximum: 150	
Select from Service Category from drop down list			
Service Categories			
Service Categories	Short Code	Number of Services	
General_surgery	SUR	47	
Diagnosis_and_or_treatment_interventions_implemented	DTI	21	
Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	MES	42	
State_Order_Services_two	XX2	143	
State_Order_Services_three	XX3	1	
Total services		607	
List of Services			
Short Code	Service Category	Service	
SUR_1	General_surgery	Obstruction without necrosis (GP)	
SUR_2	General_surgery	Appendectomy	
SUR_3	General_surgery	Appendectomy (SS and CP)	
SUR_4	General_surgery	Appendectomy (GP)	
SUR_5	General_surgery	Appendectomy laparoscopic (GP)	
XX2_143	State_Order_Services_two	Orthopedic day care /adult/	
XX2_144	State_Order_Services_two	Pustular surgery (including blood sowing established sepsis) / adult /	
XX3_2	State_Order_Services_three	General Surgical /adult/1.08/	

Note: Screenshot contains hidden rows for illustration purposes only.

TAKE NOTE

It is very important to note that “Undo” or “CTRL+Z” does not work in [add](#) and [delete](#) VBA buttons. Deleting an existing service category deletes ALL health services under that category, thus, make sure the category is no longer needed.

Services

All health [Services](#) are classified by health category. By default, a total of 607 health services are preset in the SLAM file for the 22 default health categories (Figure 100).

Figure 100: Number of Services in the Service Category
Summary List of the 1.2A Service Categories Worksheet

Service Categories			
0 Service Categories	Short Code	Number of Services	
1 General_surgery	SUR	47	
2 Diagnosis_and_or_treatment_interventions_implemented	DTI	21	
3 Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	MES	42	
4 Cardiology	CAR	14	
5 Gynecology	GYN	16	
6 Hospital_care_with_short_term_or_small_volumes_or_low_cost	HOS	6	
7 Neurosurgical_operations	NEU	12	
8 Oncology	ONC	3	
9 Ophthalmology	OPH	21	
10 Proctology	PRO	38	
11 Reanimation_and_intensive_care	RIC	5	
12 Small_surgical_interventions_that_require_no_daily_hospital_c	SMA	15	
13 Therapy	THE	8	
14 Thoracic_Surgery	THO	13	
15 Traumatology_and_orthopedy	TRA	67	
16 Urology	URO	49	
17 Vascular_interventions	VAS	17	
18 Costly_Diagnostic_Tests	CDT	12	
19 Burn	BUR	1	
20 State_Order_Services	XXX	56	
21 State_Order_Services_two	XX2	143	
22 State_Order_Services_three	XX3	1	
Total services		607	

Users may add health services in the **Adding Services** section of the worksheet (Figure 101) and delete health services in the **Deleting Services** section of the worksheet (Figure 102). Up to 150 services may be added per health category, while at least one health service must remain for each health category.

Figure 101: The Adding Services Section in the 1.2A Service Categories Worksheet

Adding Services			
Select Service Category to which Service is to be added			
			Maximum: 150
Add a Service			
			<div>Add Item</div>

Figure 102: The Deleting Services Section in the 1.2A Service Categories Worksheet

	A	B	C	D
19		Deleting Services		
20		Select Service Category from which Service is to be deleted		
21		Diagnosis_and_or_treatment_interventions_implemented	Minimum: 1	
22				
23				
24		Delete a Service		
25			Delete Item	
26

TAKE NOTE

Users must be careful in using [add](#) and [delete](#) VBA buttons since “Undo” or “CTRL+Z” does not work with these macros.

To add a new health service under an existing service category: (i) select the existing service category of interest (e.g., “Inpatient Services”) in the drop-down menu of **cell B15**; (ii) encode the name of the health service (e.g., “Accident/Trauma”) in **cell B18**; and (iii) click the [Add Item](#) button beside it. See illustration in Figure 103.

Figure 103: Adding Services in the 1.2A Service Categories Worksheet

	A	B	C
13		Adding Services	
14		Select Service Category to which Service is to be added	
15		General_surgery	(A) Select from drop-down menu
16		Diagnosis_and_or_treatment_interventions_implemented	
17		Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	
18		Cardiology	Add Item
19		Gynecology	
20		Hospital_care_with_short_term_or_small_volumes_or_low_cost	
21		Neurosurgical_operations	
22		Oncology	

	A	B	C
13		Adding Services	
14			
15		(B) Input service name	
16		Add a Service	
17		Accident/Trauma	(C) Click 'Add Item'
18			Add Item
19			

The new healthcare service will now be added to the “Number of Services” corresponding to the “Service Category” in the “**Service Categories**” section. For example, the number of services for category “General_surgery” increased from the default 47 to 48. See illustration in Figure 104.

Figure 104: Number of Services Updated in the Service Categories Summary List in the 1.2A Service Categories Worksheet

Service Categories			
0	Service Categories	Short Code	Number of Services
1	General_surgery	SUR	48
2	Diagnosis_and_or_treatment_interventions_implemented	DTI	21
3	Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	MES	42
4	Cardiology	CAR	14
5	Gynecology	GYN	16
6	Hospital_care_with_short_term_or_small_volumes_or_low_cost	HOS	6
7	Neurosurgical_operations	NEU	12
8	Oncology	ONC	3
9	Ophthalmology	OPH	21
10	Proctology	PRO	38
11	Reanimation_and_intensive_care	RIC	5
12	Small_surgical_interventions_that_require_no_daily_hospital_c	SMA	15
13	Therapy	THE	8
14	Thoracic_Surgery	THO	13
15	Traumatology_and_orthopedy	TRA	67
16	Urology	URO	49
17	Vascular_interventions	VAS	17
18	Costly_Diagnostic_Tests	CDT	12
19	Burn	BUR	1
20	State_Order_Services	XXX	56
21	State_Order_Services_two	XX2	143
22	State_Order_Services_three	XX3	1
Total services			608

The new healthcare service (e.g., “Accident/Trauma”) will be displayed at the end of existing rows (e.g., row 105, or line number 48) under the “General_surgery” category in the **List of services** section. See Figure 105 for illustration.

Figure 105: New Service Added in the List of Services Section of the 1.2A Service Categories Worksheet

A	B	C	D	E	F
87	30 SUR_30	General_surgery	strumectomy average volume (GP)		
88	31 SUR_31	General_surgery	Strumectomy radical lymph dissection volume		
89	32 SUR_32	General_surgery	strumectomy radical lymph dissection volume (GP)		
90	33 SUR_33	General_surgery	strumectomy small volume (GP)		
91	34 SUR_34	General_surgery	Ventral hernia great (without a net value) (GP)		
92	35 SUR_35	General_surgery	Ventral hernia great (without a net value) (SS and CP)		
93	36 SUR_36	General_surgery	Focal surgery for intestinal pathologies (SS and CP)		
94	37 SUR_37	General_surgery	Operations obstruction case (GP)		
95	38 SUR_38	General_surgery	Operations on choledochus (SS and CP)		
96	39 SUR_39	General_surgery	Operations on choledochus (GP)		
97	40 SUR_40	General_surgery	Operations of ulcerative disease (GP)		
98	41 SUR_41	General_surgery	In case of gastric cancer surgery pathologies (SS and CP)		
99	42 SUR_42	General_surgery	Removal of the spleen (GP)		
100	43 SUR_43	General_surgery	Removal of small tumors (general anesthesia) (SS and CP)		
101	44 SUR_44	General_surgery	Removal of small tumors (general anesthesia) (GP)		
102	45 SUR_45	General_surgery	Removal of small tumors (local anesthesia) (SS and CP)		
103	46 SUR_46	General_surgery	Removal of small tumors (local anesthesia) (GP)		
104	47 SUR_47	General_surgery	Circular resection for rectal use device		
105	48 SUR_48	General_surgery	Accident/Trauma		
106	49 DTI_1	Diagnosis_and_or_treatment_interventions_imple	Diagnostic thoracotomy (SS and CP)		

Note: Screenshot contains hidden rows for illustration purposes only.

To delete a single service (e.g., “Accident/Trauma”) under an existing service category, select first the existing service category of interest (e.g., “General surgery”) in the drop-down menu of **cell B22** (Figure 106).

Figure 106: Selecting an Existing Service Category in the 1.2A Service Categories Worksheet

The screenshot shows a worksheet titled "Deleting Services". In cell B21, there is a text label "Select Service Category from which Service is to be deleted". In cell B22, a dropdown menu is open, displaying a list of service categories: "General surgery", "Diagnosis_and_or_treatment_interventions_implemented", "Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery", "Cardiology", "Gynecology", "Hospital_care_with_short_term_or_small_volumes_or_low_cost", "Neurosurgical_operations", and "Oncology". The "General surgery" option is selected and highlighted. To the right of the dropdown, there is a yellow callout box with the text "Select from Service Category from drop down list". Below the dropdown, there is a red button labeled "Delete Item". In cell C22, the text "Minimum: 1" is displayed.

The list of short codes for health services under the chosen category will be displayed in the drop-down menu of **cell B25**. To continue deletion, (i) select the name service to be deleted (e.g., “Accident/Trauma” under “General surgery” health category) and then (ii) click the **Delete Item** button, as illustrated in Figure 107.

Figure 107: Deleting a Single Health Service Under a Service Category in the 1.2A Service Categories Worksheet

The screenshot shows the same "Deleting Services" worksheet. In cell B22, "General surgery" is still selected in the dropdown. In cell B25, a new dropdown menu is open, displaying a list of specific health services under "General surgery": "In case of gastric cancer surgery pathologies (SS and CP)", "Removal of the spleen (GP)", "Removal of small tumors (general anesthesia) (SS and CP)", "Removal of small tumors (general anesthesia) (GP)", "Removal of small tumors (local anesthesia) (SS and CP)", "Removal of small tumors (local anesthesia) (GP)", "Circular resection for rectal use device", and "Accident/Trauma". The "Accident/Trauma" option is selected and highlighted. A red callout box with the text "(A) Select a service" points to this selection. To the right of the dropdown, there is a red button labeled "Delete Item". A yellow callout box with the text "Select from service subcategory from drop down list" points to the dropdown menu. Above the "Delete Item" button, there is a red callout box with the text "(B) Click 'Delete Item'". In cell C22, the text "Minimum: 1" is displayed.

TAKE NOTE

Users must be careful to select the correct code to be deleted since “Undo” or “CTRL+Z” does not work with the **Delete Item** VBA-button.

A dialog box will then be displayed, verifying removal of the selected healthcare service. Selecting [Yes](#) in the message box will delete the chosen health service, while selecting [No](#) will abort the deletion process and will retain the identified health service (Figure 108).

Figure 108: Message Box Verifying Deletion of a Health Service in the 1.2A Service Categories Worksheet

The deleted health service category will no longer be found in the “Delete a Service” drop-down menu of the “**Deleting Services**” section; will not be counted in the “**Service Categories**” section (i.e., 47 services for “General surgery” category from earlier 48); and will not be displayed in the “**List of Services**” section for the specified service category (Figure 109).

Figure 109: Sample Accident/Trauma Service Under General Surgery Category Removed in the 1.2A Service Categories Worksheet

21	Select Service Category from which Service is to be deleted			
22	General surgery			
23				
24	Delete a Service			
25	Accident/Trauma			
26				
27				
28				
29				
30				
31				
32	Service categories	Short Code	Number of Services	
33	General surgery	SUR	47	
34	State_Order_Services_three	XX3	1	
35				
36	Total services		607	
37				
38	Short Code	Service Category	Service	
39	1 SUR_1	General surgery	Obstruction without necrosis (GP)	
40	2 SUR_2	General surgery	Appendectomy	
41	3 SUR_3	General surgery	Removal of small tumors (local anesthesia) (GP)	
42	4 SUR_4	General surgery	Removal of small tumors (general anesthesia) (GP)	
43	5 SUR_5	General surgery	Removal of small tumors (local anesthesia) (SS and CP)	
44	6 SUR_6	General surgery	Circular resection for rectal use device	
45	DTI_1	Diagnosis_and_or_treatment_interventions_imple	Diagnostic thoracotomy (SS and CP)	

Note: Screenshot contains hidden rows for illustration purposes only.

On the other hand, deleting ALL services under an existing service category is similar to deleting a service category, as discussed earlier. Simply (i) select the name of the category (e.g., “Inpatient Services”) from the drop-down menu of **cell B11**, (ii) click the [Delete Item](#) button beside it, and (iii) click [OK](#) in the displayed dialog box (Figure 110). Clicking the exit (X) button in the upper left corner of the dialog box **will still delete** the selected service category, thereby deleting ALL services in that category.

Figure 110: Deleting All Health Services Under an Existing Service Category in the 1.2A Service Categories the Worksheet

The deleted category will no longer be found in the “Delete a Service Category” drop-down menu of “**Adding/Deleting Service Categories**” section; not displayed in the “**Service Categories**” section; and all health services under the deleted category will no longer be seen in the “**List of Services**” section (Figure 111).

Figure 111: Example of Deleting All Health Services Under the Inpatient Services Category

A		B	C
6		Adding / Deleting Service Categories	
7		Add a Service Category - <i>Only letters allowed, case sensitive</i>	
8			Maximum: 30
10		Delete a Service Category	
11			Minimum: 1
12		Diagnosis_and_or_treatment_interventions_implemented	
27		Maxillofacial_Surgery_and_Nose_Throat_Ear_Surgery	
28		Cardiology	
29		Gynecology	
30		Hospital_care_with_short_term_or_small_volumes_or_low_cost	
31		Neurosurgical_operations	
32		Oncology	
33		Ophthalmology	
34		Service Categories	Short Code
35		1 Diagnosis_and_or_treatment_interventions_implemented	DTI
54		Total services	
55			
56		0 Short Code	Service Category
57		1 DTI_1	Diagnosis_and_or_treatment_interventions_imple
58		2 DTI_2	Diagnosis_and_or_treatment_interventions_imple
59		3 DTI_3	Diagnosis_and_or_treatment_interventions_imple
60		4 DTI_4	Diagnosis_and_or_treatment_interventions_imple

TAKE NOTE

It is very important to note that “Undo” or “CTRL+Z” does not work in [add](#) and [delete](#) VBA buttons. Deleting an existing service category deletes ALL health services under that category, thus make sure the category is no longer needed.

D. The 1.2B Health Needs Input Sheet

This worksheet (Figure 112) provides space for recording the **health needs** of the target population. As discussed in Chapter III-D6 (Health needs, health services and health service costs), SLAM assumes that **health services** represent the health needs of the insured household members.

Mainly, this worksheet provides for inputting the following assumptions, described in Chapter II-D:

- Assumption 19: Predicting Future Health Needs
- Assumption 20: Stable Incidences and Prevalences under the Baseline Scenario

Specifically, this worksheet allows setting up per health service of the service **code**; standardization **per 1,000 / 10,000/100,00** population; **target population**; **sex**; lower bound age (**Age: LB**); upper bound age (**Age:UB**); **sensitivity factor**; **incidence/prevalence**; and **inpatient days of the service** (if applicable).

Figure 112: Preview of the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence										Sensitivity factor: 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%						
Specify item (row number)										Specify number items to be added / deleted						
14568										1						
: Current number of items (max 20,000)										1						
Service										Specify the incidence / prevalence of the Service						
per 1,000 / 10,000 / Specify sub target population										Period						
Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
1	Burn treatment cases	100,000	G1: Children	Female	18	24										
2	Cardiology Coronary angiography (including contrast material cost of angiography)	100,000	G2: Formal Sector	Female	18	24										
3	Cardiology Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female	18	24										
4	Cardiology One Drug eluted stent two non medical eluted stent	100,000	G2: Formal Sector	Female	18	24										
5	Cardiology Stenting with drug eluted 3 stent	100,000	G2: Formal Sector	Female	18	24										
6	Cardiology Stenting with drug eluted 4 stent	100,000	G2: Formal Sector	Female	18	24										
7	Cardiology Maximal and peripheral artery stenting, the stent	100,000	G2: Formal Sector	Female	18	24										
8	Cardiology Coronary artery balloon dilatation using one cylinder	100,000	G2: Formal Sector	Female	18	24										
9	Cardiology Coronary artery balloon dilatation using two cylinders	100,000	G2: Formal Sector	Female	18	24										
10	Cardiology Coronary angiography (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
11	Cardiology Stenting with 1 non drug eluted stent (SS and CP)	100,000	G2: Formal Sector	Female	18	24										
12	Cardiology Non-drug eluted stenting with one stent	100,000	G2: Formal Sector	Female	18	24										
13	Cardiology Drug eluted 1 stent stenting (SS and CP)	100,000	G2: Formal Sector	Female	18	24										
14	Cardiology One Drug eluted stent one non medical eluted stent (SS and CP)	100,000	G2: Formal Sector	Female	18	24										
15	Cardiology Drug eluted 2 stent stenting (SS and CP)	100,000	G2: Formal Sector	Female	18	24										
16	Costly Diagnostic Tests CT angiography is 1 sector (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
17	Costly Diagnostic Tests Magnetic resonance imaging (contrast material without contrast)	100,000	G2: Formal Sector	Female	18	24										
18	Costly Diagnostic Tests Magnetic resonance imaging (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
19	Costly Diagnostic Tests The citizen computer X-ray tomography is more than 1 place	100,000	G2: Formal Sector	Female	18	24										
20	Costly Diagnostic Tests CT angiography is 1 sector (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
21	Costly Diagnostic Tests Computed tomography angiography section 2 (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
22	Costly Diagnostic Tests Computed tomography angiography section 2 (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
23	Costly Diagnostic Tests Computed tomography angiography with 3 parts (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
24	Costly Diagnostic Tests Computed tomography angiography with 3 parts (including the value of contrast material)	100,000	G2: Formal Sector	Female	18	24										
25	Costly Diagnostic Tests ECG Holter monitoring (SS and CP)	100,000	G2: Formal Sector	Female	18	24										
26	Costly Diagnostic Tests X-ray computer tomography (brain, orbital, pituitary, thyroid, chest, abdomen, pelvis)	100,000	G2: Formal Sector	Female	18	24	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1

Notes: CT= computed tomography, ECG = electrocardiogram.

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells	
<input type="text" value="100.00"/>	Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
<input type="text" value="100.00"/>	Input cell, select option from list
<input type="text" value="100.00"/>	Input cell, select option from list, input defined on another sheet
Free Text Cells	
<input type="text" value="Note"/>	Input cell to write comments
Calculation Cells	
<input type="text" value="200.00"/>	Cell used to (visually) check results (locked)
Buttons	
<input type="button" value="Add Item"/>	Button to perform action such as adding or deleting rows and/or columns, selecting an option or performing an action
Green text on a button means an item is added, red text means an item is deleted	

- Restricted input cells for encoding only positive numeric values;
- Restricted input cells for selection from a drop-down list;
- Restricted input cells for selection from a drop-down list of inputs defined on another worksheet;
- Free text cells for adding corresponding explanations, comments, sources, or other helpful texts pertaining to encoded information;
- Calculation cells that are locked and used to visually check results; and
- Buttons with green text for adding an item, and buttons with red text for deleting an item.

For discussion purposes, this worksheet will be divided into four sections:

- **Columns A–I** for service specifications, or *Assumption 19* (Figure 113);
- **Columns K–Y** for incidence/prevalence of service specifications, or *Assumption 20* (Figure 114);
- **Column AA–AO** for inpatient days of the service specifications (Figure 115); and
- **Column AQ–BD** for control, validation, and notes (Figure 116).

Figure 113: Service Specifications Section in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence							
Specify item (row number)		Specify number items to be added / deleted		Sensitivity factors Periods of projection			
<input type="text" value="14568"/>		<input type="text" value="1"/>					
: Current number of items (max 20,000)		<input type="text" value="1"/>					
Service	per 1,000 / 10,000 /	Specify sub target population	Sex	Age: LB	Age: UB		
Service Category	Service provided	Target population					
1 Burn	Burn treatment cases	G1: Children	Female	18	24		
2 Cardiology	Coronary geography (including contrast material cost of anes	G2: Formal Sector	Female	18	24		
3 Cardiology	Drug eluted 2 stent stenting (in the State)	G2: Formal Sector	Female	18	24		
4 Cardiology	One Drug eluted stent two non medical eluted stent	G2: Formal Sector	Female	18	24		
5 Cardiology	Stenting with drug eluted 3 stent	G2: Formal Sector	Female	18	24		

Figure 114: Incidence/Prevalence of the Service Specifications Section in the 1.2B Health Needs Worksheet

	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
3																		
4	Sensitivity factor:		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5	Periods of projections:		15															
6			Specify the incidence/prevalence of the service															
7			Period															
8			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
9			Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence
10																		
11	Age: LB	Age: UB																
13	18	24	<div>Simple Linear Actuarial Model</div> <div>Number of expected services per rate as set in column E</div>															
14	18	24																
15	18	24																
16	18	24																

Figure 115: Inpatient days of the Service Specifications Section in the 1.2B Health Needs Worksheet

	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
3																
4																
5																
6	Specify the estimated associated number of inpatient days of the Service (if applicable)															
7	Period															
8		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
9		Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days
10																
11																
13		<div>Simple Linear Actuarial Model Number of inpatient days admitted per episode. Only applicable for service that have inpatient admission, else leave empty.</div>														
14																
15																
16																
17																
18																

Figure 116: Control, Validation, and Notes Section in 1.2B Health Needs Worksheet

	AP	AQ	AR	AS	AT	BA	BB	BC	BD
8									
9						Expected	Expected # IPD		
10	Control cells (warning texts)					period events	days per period	Notes:	
11									
13						-	-		
14						-	-		
15						-	-		
16						-	-		
17						-	-		
18						-	-		

Service

The default setting of this worksheet includes all **Service Category** (column C) and **Service provided** (column D) defined in the 1.2A Service Categories” worksheet (Figure 117).

Figure 117: Service Category and Service Provided Columns in the 1.2B Health Needs Worksheet Defined in 1.2A Service Categories Worksheet

	A	C	D	E	F	G	H	I
10		Service		per 1,000 / 10,000 /	Specify sub target population			
11		Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB
13	1	Burn	Burn treatment cases	100,000	G1: Children	Female	18	24
14	2	Cardiology	Coronary geography (including	100,000	G2: Formal Sector	Female	18	24
15	3	Cardiology	Drug eluted 2 stent stenting (	100,000	G2: Formal Sector	Female	18	24
16	4	Cardiology	One Drug eluted stent two no	100,000	G2: Formal Sector	Female	18	24
17	5	Cardiology	Stenting with drug eluted 3 st	100,000	G2: Formal Sector	Female	18	24
18	6	Cardiology	Stenting with drug eluted 4 st	100,000	G2: Formal Sector	Female	18	24

All incidence, prevalence, and inpatient days will be recorded for all target groups defined in the 1.1A Target Populations worksheet, which are the following:

- Group 1: Children
- Group 2: Formal Sector
- Group 3: Disabled
- Group 4: Pensioners
- Group 5: State Order - Others
- Group 6: Everyone Else

This means that the rows of service types defined in the 1.2A Service Categories worksheet should be repeated for all applicable target groups, sex, and age bracket. The current setting of the SLAM limits the number of items or rows into 20,000. In its default setting for 1.2B Health Needs, the worksheet includes all health services for applicable member groups and respective sex and age bracket totaling to 14,568 items for health needs definition (Figure 118).

Figure 118: Control, Validation, and Notes Section in 1.2B Health Needs Worksheet

	A	C	D	E	F	G	H	I
3	1.2B Health Needs - Expected incidence / prevalence							
4								
5	Specify item (row number)			Specify number items to be added / deleted			Sensitivity factor	
6	<div></div>		<div>Add 1 Item</div>	<div>1</div>		<div>Add Multiple Items</div>	Periods of projection	
7	<div></div>		<div>Delete 1 Item</div>	<div>1</div>		<div>Delete Multiple Items</div>		
8	14568		: Current number of items (max 20,000)					
9								
10	Service per 1,000 / 10,000 / Specify sub target population							
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB	
14574	14562	Vascular interventions	Bilateral Venetectomy	100,000	G6: Everyone Else	Male	45	63
14575	14563	Vascular interventions	Bilateral Venetectomy (GP)	100,000	G6: Everyone Else	Male	45	63
14576	14564	Vascular interventions	Artery - venous hemodialysis for design fistula	100,000	G6: Everyone Else	Male	45	63
14577	14565	Vascular interventions	Major vascular surgery, thoracic and lumbar sympathectomy,	100,000	G6: Everyone Else	Male	45	63
14578	14566	Vascular interventions	Magistral and balloon dilatation of peripheral arteries using a	100,000	G6: Everyone Else	Male	45	63
14579	14567	Vascular interventions	Magistral and peripheral arterial stenting and balloon dilatati	100,000	G6: Everyone Else	Male	45	63
14580	14568	Vascular interventions	Magistral and peripheral artery stenting, 2 stent	100,000	G6: Everyone Else	Male	45	63

The modeling of future health needs is done per health service and standardized per 1,000, 10,000 or 100,000 members by target group. **Column E** (Figure 119) allows the user to select the standardization figure to use. The default setting provided is per 1,000 population but users may edit the selection using the drop-down list. If left empty, the SLAM will assume that per 100,000 population is required for analysis.

Figure 119: Input Cells for Standardization per 1,000/10,000/100,000 in the 1.2B Health Needs Worksheet

A	C	D	E	F	G	H	I
10	Service		per 1,000 / 10,000 /	Specify sub target population			
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB
13	1 Burn	Burn treatment cases		Simple Linear Actuarial Model Set the rate per 1,000 population 10,000 population 100,000 population If left empty, 100,000 is assumed	Female	18	24
14	2 Cardiology	Coronary geography (including contrast material cost of anest			Female	18	24
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)			Female	18	24
16	4 Cardiology	One Drug eluted stent two non medical eluted stent			Female	18	24
17	5 Cardiology	Stenting with drug eluted 3 stent			Female	18	24
18	6 Cardiology	Stenting with drug eluted 4 stent			Female	18	24

A	C	D	E	F	G	H	I
10	Service		per 1,000 / 10,000 /	Specify sub target population			
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female	18	24
14	2 Cardiology	Coronary geography (including contrast material cost of	1000	G2: Formal Sector	Female	18	24
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100000	G2: Formal Sector	Female	18	24

While an automated list is provided for each health service row in **Column E**, it is not necessary, and tedious as well, to use the drop-down menu when editing the target standardization figures. For convenience, users may edit the first entry (e.g., cell E13) then copy-paste-hard-values the selection to the rest of health services that will require changes (e.g., cells E14-E14580).

Column F meanwhile provides the space for defining the **Target Population** to which the health needs for the health service in column D will be specified (Figure 120). The options are automatically picked up by the program from the groups defined in the 1.1A Target Populations worksheet.

Figure 120: Input Cells for Target Population in the 1.2B Health Needs Worksheet

A	C	D	E	F	G	H	I
10	Service		per 1,000 / 10,000 /	Specify sub target population			
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female	18	24
14	2 Cardiology	Coronary geography (including contrast material cost of anest	100,000	G2: Formal S	Female	18	24
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal S	Female	18	24
16	4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	G2: Formal S	Female	18	24

A	C	D	E	F	G	H	I
10	Service		per 1,000 / 10,000 /	Specify sub target population			
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female	18	24
14	2 Cardiology	Coronary geography (including contrast material cost of anest	100,000	G1: Children	Female	18	24
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female	18	24
16	4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	G3: Disabled	Female	18	24
17	5 Cardiology	Stenting with drug eluted 3 stent	100,000	G4: Pensioners	Female	18	24
				G5: State Order - Others	Female	18	24
				G6: Everyone Else	Female	18	24

Similar with column E, it is not necessary, and tedious as well, to choose from the drop-down list for all cells in **column F**. A user may select a target group (e.g., G2: Formal Sector in cell F13) then copy the contents to the rest cells pertaining to where the selected target group is appropriate (e.g., F14 up to F14,580).

For each service and target populations defined in columns B to F, users are then required in **column G** (Figure 121) to identify corresponding **Sex** such that whether the calculations will be applied to “Female,” “Male,” or “Both.” If left empty, the SLAM program will automatically compute for both females and males.

Figure 121: Input Cells for Sex in the 1.2B Health Needs Worksheet

A	C	D	E	F	G	H	I	J
10	Service		per 1,000 / 10,000 /	Specify sub target population				
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB	
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female			
14	2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector	Female			
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female			
16	4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	G2: Formal Sector	Female			
17	5 Cardiology	Stenting with drug eluted 3 stent	100,000	G2: Formal Sector	Female			

Simple Linear Actuarial Model
If left empty, calculations are made for Females and Males (i.e. Both)

A	C	D	E	F	G	H	I	J
10	Service		per 1,000 / 10,000 /	Specify sub target population				
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB	
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female	18	24	
14	2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector	Female	18	24	
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female	18	24	

Column G (Sex) also allows for copying the contents of cells within this column. However, users must review carefully the services provided to determine whether appropriate sex entries are selected. While most healthcare services are for both males and females, breast removal and all gynecology services, for instance, apply only to females.

Column H (Lower Bound Age) and **column I (Upper Bound Age)** as shown in Figure 122, require the user to define the applicable age range for each of the health services defined in Column D. For instance, only women of reproductive health age (i.e., 15–49 years) are expected to obtain health services that are related to childbirth. The options in the drop-down list are those defined in the 1.1A Target Populations worksheet. If the cells are left empty in columns H and I the program will assume the lowest and highest possible age bound, respectively. These two columns also allow for copying of cells within the same column.

Figure 122: Input Cells for Age Bracket in the 1.2B Health Needs Worksheet

A	C	D	E	F	G	H	I	J	K	L
10	Service		per 1,000 / 10,000 /	Specify sub target population						
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB			
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female					
14	2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector	Female					
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female					
16	4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	G2: Formal Sector	Female					
17	5 Cardiology	Stenting with drug eluted 3 stent	100,000	G2: Formal Sector	Female					
18	6 Cardiology	Stenting with drug eluted 4 stent	100,000	G2: Formal Sector	Female					

Simple Linear Actuarial Model
Set the Lower bound for specified age group.
Age groups are defined on '1.1A Target Populations'.
If left empty, the lowest possible age bound is assumed (presumably 0).

A	C	D	E	F	G	H	I	J	K	L
10	Service		per 1,000 / 10,000 /	Specify sub target population						
11	Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB			
13	1 Burn	Burn treatment cases	100,000	G1: Children	Female	18				
14	2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector	Female	18				
15	3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female	18				
16	4 Cardiology	One Drug eluted stent two non medical eluted stent	100,000	G2: Formal Sector	Female	18				
17	5 Cardiology	Stenting with drug eluted 3 stent	100,000	G2: Formal Sector	Female	18				
18	6 Cardiology	Stenting with drug eluted 4 stent	100,000	G2: Formal Sector	Female	18				

Simple Linear Actuarial Model
Set the Upper bound for specified age group.
If left empty, the highest possible age bound is assumed (e.g. 100+).

Adding and/or Deleting Services

In adding and/or deleting services (Figure 123), row number after which service(s) should be added (**cell C6**) or deleted (**cell C7**) must be specified first. After which, the number of rows corresponding to the number of items to be added (**cell F6**) or deleted (**cell F7**) can be specified.

Figure 123: Input Cells for Adding and/or Deleting Services in the 1.2B Health Needs Worksheet

A	B	C	D	E	F	G
3	1.2B Health Needs - Expected incidence / prevalence					
4						
5	Specify item (row number)			Specify number items to be added / deleted		
6	<input type="text"/>			<input type="text"/>		
7	<input type="text"/>			<input type="text"/>		
8	14568 : Current number of items (max 20,000)			1 : Add Multiple Items		
9				1 : Delete Multiple Items		

Suppose the user wants to add a new health service and it needs to be at or near the top of the list of services. The user should input “1” in **cell C6** (Figure 124) to indicate that the new item will be added AFTER the first health service. The default setting in the SLAM program allows for adding new entries in all rows except for the very first health service. Thus, the row number specified in C6 should be equal or greater than 1. If left empty, the new item(s) will be added at the end of the list.

Figure 124: Input Cells for Specifying Row Number in the 1.2B Health Needs Worksheet (Part 1)

A	B	C	D	E	F	G	H	I
3	1.2B Health Needs - Expected incidence / prevalence							
4								
5	Specify item (row number)			Specify number items to be added / deleted			Sensitivity factor	
6	<input type="text" value="1"/>			<input type="text" value="1"/>			<input type="text" value="1"/>	
7	<input type="text"/>			<input type="text"/>			<input type="text"/>	
8	14 : Specify the row number after which the item(s) should be added. Row number must be equal or greater than 1.			1 : Add Multiple Items			Periods of projection	
9	Maximum of number of 500 items / rows.			1 : Delete Multiple Items				
10	If left empty, item(s) will be added at the end.							
11	Service			per 1,000 / 10,000 / Specify sub target population				
12	Service Category			Target population			Sex	
13	1	Burn	100,000	G1: Children	Female	18	24	
14	2	Cardiology	100,000	G2: Formal Sector	Female	18	24	
15	3	Cardiology	100,000	G2: Formal Sector	Female	18	24	

After indicating the row number in cell C6, the user must click on the **Add 1 item** button in **cell D6**. A new row (e.g., row 14 or line number 2 in column A) as shown in Figure 125, will then be displayed with undefined entries in columns B–I.

Figure 125: Input Cells for Specifying Row Number in the 1.2B Health Needs Worksheet (Part 2)

A	B	C	D	E	F	G	H	I
3	1.2B Health Needs - Expected incidence / prevalence							
4								
5	Specify item (row number)			Specify number items to be added / deleted			Sensitivity factor	
6	<input type="text"/>			<input type="text"/>			<input type="text"/>	
7	<input type="text"/>			<input type="text"/>			<input type="text"/>	
8	14569 : Current number of items (max 20,000)			1 : Add Multiple Items			Periods of projection	
9				1 : Delete Multiple Items				
10	Service			per 1,000 / 10,000 / Specify sub target population				
11	Service Category			Target population			Sex	
12	Service provided						Age: LB Age: UB	
13	1	Burn	Burn treatment cases	100,000	G1: Children	Female	18	24
14	2							
15	3	Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector	Female	18	24

If the user prefers that a new entry be displayed at the top of the list of services (i.e., row 13 or line number 1), the entries in the current top of the list must be first replicated to the newly added row (e.g., row 14 or line number 2). Only then should the top of the list be updated with information of the new entry of services.

For example, the current top of the list pertains to “Burn treatment cases” under the category “Burn” and the new entry is the “Accident/Trauma” under the category “General surgery” defined earlier in the *Service Categories* section on page 56. The following is the stepwise guide so that the new entry will be displayed at the top of the list:

1. In **cell B14**, select a service category parameter using the drop-down menu (e.g., Burn) (Figure 126).

Figure 126: Selecting Service Category for New Row in the 1.2B Health Needs Worksheet

The screenshot shows the '1.2B Health Needs - Expected incidence / prevalence' worksheet. In cell B14, a drop-down menu is open, displaying a list of service categories: 'Burn', 'Urology', 'Vascular interventions', 'Costly Diagnostic Tests', 'State_Order_Services', 'State_Order_Services_two', and 'State_Order_Services_three'. The 'Burn' category is currently selected. The worksheet includes input fields for 'Specify item (row number)' (14569), 'Add 1 Item', 'Delete 1 Item', 'Specify number items to be added / deleted' (1), 'Add Multiple Items', and 'Delete Multiple Items'. A table below lists services with columns for Service Category, Service provided, per 1,000 / 10,000, Target population, Sex, Age: LB, and Age: UB.

Service Category	Service provided	per 1,000 / 10,000	Target population	Sex	Age: LB	Age: UB
1 Burn	Burn treatment cases	100,000	G1: Children	Female	18	24
2	Coronary geography (including contrast material cost of anes...	100,000	G2: Formal Sector	Female	18	24
3	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female	18	24
4	Drug eluted stent two non medical eluted stent	100,000	G2: Formal Sector	Female	18	24
5	Stenting with drug eluted 3 stent	100,000	G2: Formal Sector	Female	18	24
6	Stenting with drug eluted 4 stent	100,000	G2: Formal Sector	Female	18	24

2. In **cell B14**, select a “service provided” parameter using the drop-down menu (e.g., “Burn treatment cases”) (Figure 127).

Figure 127: Selecting Service Provided for New Row in the 1.2B Health Needs Worksheet

The screenshot shows the same worksheet as Figure 126. In cell B14, a drop-down menu is open, displaying a list of service provided options: 'Burn treatment cases', 'Coronary geography (including contrast material cost of anes...', 'Drug eluted 2 stent stenting (in the State)', 'Drug eluted stent two non medical eluted stent', 'Stenting with drug eluted 3 stent', and 'Stenting with drug eluted 4 stent'. The 'Burn treatment cases' option is currently selected. The rest of the worksheet structure is identical to Figure 126.

3. The user may then copy the entries in cells E13 to I13 into cells E14 to I14 (Figure 128).

Figure 128: Copying Entries of Current Top of the List to the Newly Added Row in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence							
Specify item (row number)				Specify number items to be added / deleted		Sensitivity factor	
14569				1		Periods of projection	
: Current number of items (max 20,000)				1			
Service				per 1,000 / 10,000 /		Specify sub target population	
Service Category				100,000		Target population	
13	1	Burn	Burn treatment cases	100,000	G1: Children	Female	18 24
14	2	Burn	Burn treatment cases	100,001	G1: Children	Female	18 24
15	3	Cardiology	Coronary geography (including contrast material cost of anest	100,000	G2: Formal Sector	Female	18 24

4. Once the current top of the list has been replicated to the newly added row (Figure 129), the user can now edit the top of the list into the new service item of interest (e.g., “Accident/Trauma” previously added in the 1.2A Service Category worksheet).

Figure 129: Current Top of the List Replicated to the Newly Added Row in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence							
Specify item (row number)				Specify number items to be added / deleted		Sensitivity factor	
14569				1		Periods of projection	
: Current number of items (max 20,000)				1			
Service				per 1,000 / 10,000 /		Specify sub target population	
Service Category				100,000		Target population	
13	1	Burn	Burn treatment cases	100,000	G1: Children	Female	18 24
14	2	Burn	Burn treatment cases	100,001	G1: Children	Female	18 24

Entries in **column C** (Service Category) and **column D** (Service provided) can be redefined to General surgery and Accident/Trauma. **Column E** (Standardization figure), **column F** (Target population), **column G** (Sex), **column H** (Lower bound age), and **column I** (Upper bound age) can then be defined accordingly (Figure 130).

Figure 130: Top of the List Updated with New Entries in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence							
Specify item (row number)				Specify number items to be added / deleted		Sensitivity factor	
14569				1		Periods of projection	
: Current number of items (max 20,000)				1			
Service				per 1,000 / 10,000 /		Specify sub target population	
Service Category				100,000		Target population	
13	1	General surgery	Accident/Trauma	100,000	G1: Children	Both	18 24
14	2	Burn	Burn treatment cases	100,001	G1: Children	Female	18 24
15	3	Cardiology	Coronary geography (including contrast material cost of anest	100,000	G2: Formal Sector	Female	18 24

- (v) select the service category and service provided parameters of interest in the drop-down list under **column C** and **column D** (Figure 133);

Figure 133: Defining Sample Service in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence									
Specify item (row number)		Add 1 Item		Specify number items to be added / deleted		Sensitivity factor		Periods of projection	
14571		Delete 1 Item		1		Add Multiple Items			
				1		Delete Multiple Items			
		: Current number of items (max 20,000)							
Service				per 1,000 / 10,000 /		Specify sub target population			
Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB			
1 General surgery	Accident/Trauma	100,000	G1: Children	Both	18	24			
2 General surgery	Cesarean Section								
3									

- (vi) continue to define entries in **column E** (standardization figure), **column F** (target population), **column G** (Sex), **column H** (lower bound age), and **column I** (upper bound age), accordingly (Figure 134); and

Figure 134: Defining Other Information of New Service in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence									
Specify item (row number)		Add 1 Item		Specify number items to be added / deleted		Sensitivity factor		Periods of projection	
14571		Delete 1 Item		1		Add Multiple Items			
				1		Delete Multiple Items			
		: Current number of items (max 20,000)							
Service				per 1,000 / 10,000 /		Specify sub target population			
Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB			
1 General surgery	Accident/Trauma	100,000	G1: Children	Both	18	24			
2 General surgery	Cesarean Section	100,000	G2: Formal Sector	Female	18	24			
3									

- (vii) follow steps 5 and 6 above for the rest of newly added blank rows (Figure 135).

Figure 135: Sample New Service in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence									
Specify item (row number)		Add 1 Item		Specify number items to be added / deleted		Sensitivity factor		Periods of projection	
14571		Delete 1 Item		1		Add Multiple Items			
				1		Delete Multiple Items			
		: Current number of items (max 20,000)							
Service				per 1,000 / 10,000 /		Specify sub target population			
Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB			
1 General surgery	Accident/Trauma	100,000	G1: Children	Both	18	24			
2 General surgery	Cesarean Section	100,000	G2: Formal Sector	Female	18	24			
3 General surgery	Debridement of wound, burn, or infection	100,000	G2: Formal Sector	Both	18	24			

The same steps must be followed if a user wants to delete an existing row (**Steps 1–4** on pages 66–67) or delete multiple rows (**Steps 1–7** on pages 68–69), except that instead of using the [Add](#) button, the analyst must use the [Delete](#) button.

It is important to note that if the user decides to edit the existing entries in the 1.2A Service Categories worksheet, the entries in the 1.2B Health Needs worksheet must be reviewed and updated as necessary when changes are made in the health services.

For instance, if the user in the 1.2A Service Categories worksheet (Figure 136) renamed the service “Cesarean Section” under “General surgery” category to “CS,” the name “Cesarean Section” in the 1.2B Health Needs worksheet (e.g., item number 2) will be retained and must be updated to “CS” by selecting the new name in the drop-down list. The previous entries in columns E–I are still saved by the program (Figure 137). Thus, if a user assigns a new service in the first row/line number 1, all entries in the said row must be checked for consistency.

Figure 136: Editing Services in the 1.2A Service Category Worksheet

	A	B	C	D	E	F
104	47	SUR_47	General_surgery	Circular resection for rectal use device		
105	48	SUR_49	General_surgery	Accident/Trauma		
106	49	SUR_50	General_surgery	CS		
107	50	SUR_51	General_surgery	Debridement of wound, burn, or infection		

Figure 137: Updating Entries in the 1.2B Health Needs Worksheet

	A	C	D	E	F	G	H	I
10		Service		per 1,000 / 10,000 /	Specify sub target population			
11		Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB
13	1	General surgery	Accident/Trauma	100,000	G1: Children	Both	18	24
14	2	General surgery	CS	100,000	G2: Formal Sector	Female	18	24
15	3	General surgery	Removal of small tumors (general anesthesia) (SS and CP)	100,000	G2: Formal Sector	Both	18	24
16	4	Burn	Removal of small tumors (general anesthesia) (GP)	100,000	G1: Children	Female	18	24
17	5	Cardiology	Removal of small tumors (local anesthesia) (SS and CP)	100,000	G2: Formal Sector	Female	18	24
18	6	Cardiology	Circular resection for rectal use device	100,000	G2: Formal Sector	Female	18	24
19	7	Cardiology	Accident/Trauma	100,000	G2: Formal Sector	Female	18	24
			Debridement of wound, burn, or infection	100,000	G2: Formal Sector	Female	18	24

On the other hand, when a service has been deleted in the 1.2A Service Categories worksheet, this will automatically be removed in the 1.2B Health Needs worksheet as well as other related tabs. Figure 138 shows the updated 1.2B Health Needs worksheet when the previously added services (i.e., “Accident/Trauma,” “CS,” and “Debridement of wound, burn, or infection”) were deleted.

Figure 138: Deleted Entries in the 1.2B Health Needs Worksheet

1.2B Health Needs - Expected incidence / prevalence									
Specify item (row number)					Specify number items to be added / deleted				
<input type="button" value="Add 1 Item"/> <input type="button" value="Delete 1 Item"/>					<input type="button" value="Add Multiple Items"/> <input type="button" value="Delete Multiple Items"/>				
14568 : Current number of items (max 20,000)					1				
Sensitivity factor									
Periods of projection									
Service		per 1,000 / 10,000 /		Specify sub target population					
Service Category	Service provided	100,000	Target population	Sex	Age: LB	Age: UB			
1 Burn	urn treatment cases	100,001	G1: Children	Female	18	24			
2 Cardiology	Coronary geography (including contrast material cost of anes	100,000	G2: Formal Sector	Female	18	24			
3 Cardiology	Drug eluted 2 stent stenting (in the State)	100,000	G2: Formal Sector	Female	18	24			

Incidence/Prevalence of the Service

Columns K–Y require the SLAM user to *specify the incidence or prevalence of the service* defined in column D (“Service provided”) for the target population characteristics specified in columns F–I (“Target population,” “Sex,” “Lower bound age,” and “Upper bound age”). Up to 15 columns are provided for the *periods of projections*. The number of period is shown in **cell K5**, which is picked up from the 1.0 General Assumptions worksheet. For each period, *the sensitivity factor* by which the incidence is increased (positive percentage) or decreased (negative percentage) can be specified in **row 4** (Figure 139).

Figure 139: Periods of Projections and Incidence/Prevalence of the Service per Period in the 1.2B Health Needs Worksheet

	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
3																			
4	Sensitivity factor:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
5	Periods of projections:	15																	
6	Specify the incidence / prevalence of the Service																		
7	Period																		
8		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
9		Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence	Incidence			
10																			
11	Age: LB	Age: UB																	
13	18	24																	
14	18	24																	
15	18	24																	
16	18	24																	

As noted in Assumption 20 (Chapter III-D6) the baseline scenario presumes that incidence and prevalence of all conditions do not change over time.

Inpatient Days of the Service

Columns AA–AO (Figure 140) meanwhile provide space for the SLAM user to specify the estimated number of inpatient days associated with the health services defined in column D (“Service Provided”), if applicable.

Figure 140: Input Cells for Number of Inpatient Days of the Service in the 1.2B Health Needs Worksheet

	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
3																
4																
5																
6		<i>Specify the estimated associated number of inpatient days of the Service (if applicable)</i>														
7		Period														
8		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
9		Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days	Nbr of days
10																
11																
13																
14																
15																
16																
17																
18																
19																
20																

Control, Validation, and Notes

Control or warning cells are provided in **columns AQ–AT** (Figure 141) to inform the users when inconsistencies in various entries are entered.

Figure 141: Control Cells with Warning Texts Columns in the 1.2B Health Needs Worksheet

	AO	AP	AQ	AR	AS	AT	BA	BB	BC	BD
8	15									
9	Nbr of days						Expected	Expected # IPD		
10			Control cells (warning texts)				period events	days per period		Notes:
11										
13							-	-		
14							-	-		
15							-	-		
16							-	-		

Note: IPD = inpatient days.

Column AQ (Figure 142) requires users to select a group when new rows are added using the [Add 1 Item](#) or [Add Multiple Items](#) buttons.

Figure 142: Validation Rule for Column AQ in the 1.2B Health Needs Worksheet

AP	AQ	AR	AS	AT	BA	BB	BC	BD
14580	14568	Vascular interventions	Magistral and peripheral artery stenting, 2 stent	100,000	G6: Everyone Else	Male	45	63
14581	14569							
14582	14570							

Column AR (Figure 143) informs the user when age lower bound value entered in column H is greater than the upper bound value entered in column I.

Figure 143: Validation Rule for Column AR in the 1.2B Health Needs Worksheet

AP	AQ	AR	AS	AT	BA	BB	BC	BD
14580	14568	Vascular interventions	Magistral and peripheral artery stenting, 2 stent	100,000	G6: Everyone Else	Male	45	39
14581	14569							
14582	14570							

Columns AS–AT ensures that the lower and upper bound values entered in columns H and I, respectively, are consistent with the values in set in the 1.1A Target Populations worksheet. In current SLAM programming, however, the restrictions implemented in columns H and I (selection from drop-down menu identified from the 1.1A Target Population worksheet) already ensures that the rules defined in columns AS and AT are not violated.

Columns BA and BB are provided to compute for the “Expected period events” for Year 1 (Figure 144) and “Expected number of inpatient days (IPD) per period” for Year 1 (Figure 145), respectively. These columns are used for controlling purposes.

Figure 144: Control Cells of the Expected Period Events in the 1.2B Health Events Worksheet

AP	AQ	AR	AS	AT	BA	BB	BC	BD
8					Expected period events	Expected # IPD days per period		
9								
10								
11								
12								
13								
14								
15								
16								

Note: IPD = inpatient days.

Figure 145: Control Cells of Expected Number of Inpatient Days per Period in the 1.2B Health Events Worksheet

	AP	AQ	AR	AS	AT	BA	BB	BC	BD
8									
9						Expected period events	Expected # IPD days per period		
10						Control cells (warning texts)			Notes:
11									
13						-			Simple Linear Actuarial Model Estimates for Year 1 (provided for controlling purposes)
14						-			
15						-			

Note: IPD = inpatient days.

Column BD (Figure 146) provides the space for the SLAM user to write notes for other users and analysts.

Figure 146: Input Cells for Notes in the 1.2B Health Events Worksheet

	AP	AQ	AR	AS	AT	BA	BB	BC	BD
8									
9						Expected period events	Expected # IPD days per period		
10						Control cells (warning texts)			Notes:
11									
13						-	-		
14						-	-		
15						-	-		

Note: IPD = inpatient days.

E. The 1.3 Health Supply—Costs Input Sheet

As mentioned previously, for each health service is included in the benefit packages of a health insurance scheme, costs, prices, and tariff of providers will be used by the SLAM program to predict the expected value of future claims from current and future health insurance program members.

This worksheet (Figure 147) allows for the setting up of **costs** per health **service**. Up to five different lists on costs of healthcare services may be defined if the analyst prefers to use different data sources or different reference years. Each list may be activated or deactivated depending on which set of health service costs will be used. If there is more than one provider (e.g., public and private), distribution over various providers will be defined in the 1.4 Benefit Packages worksheet.

Figure 147: Preview of the 1.3 Health Supply—Costs Worksheet

1.3 Assumptions - Health Supply: Cost, Prices and Tariffs of Providers

Health Care Supply - Cost, Prices and Tariffs of Providers
 On this Tab price lists, lists of costs and tariffs of providers may be defined.
 Up to 5 different lists may be defined (each list can be activated or deactivated).
 The distribution over the various providers (if more than 1) will be defined on the Tab "1.4 Benefit Packages"

Notes: _____

P1: Combination (Social and State) P2: Social Package Prices P3: _____

Currency: AMD Optional: _____

Service	Service provided	Target population	Sex	Age bracket	Cost of Care	Cost OPD	Cost IPD
1 BUR_1	Burn treatment cases	G2: Formal Sector	Female	18 to 24	OK:		
2 CAR_1	Coronary geography (including c	G2: Formal Sector	Female	18 to 24	OK:		
3 CAR_10	Drug eluted 2 stent stenting (in	G2: Formal Sector	Female	18 to 24	OK:		
4 CAR_11	One Drug eluted stent two non	G2: Formal Sector	Female	18 to 24	OK:		
5 CAR_12	Stenting with drug eluted 3 ster	G2: Formal Sector	Female	18 to 24	OK:		
6 CAR_13	Stenting with drug eluted 4 ster	G2: Formal Sector	Female	18 to 24	OK:		
7 CAR_14	Magistral and peripheral artery	G2: Formal Sector	Female	18 to 24	OK:		
8 CAR_2	Coronary artery balloon dilatatio	G2: Formal Sector	Female	18 to 24	OK:		
9 CAR_3	Coronary artery balloon dilatatio	G2: Formal Sector	Female	18 to 24	OK:		
10 CAR_4	Coronary geography (including r	G2: Formal Sector	Female	18 to 24	OK:		
11 CAR_5	Stenting with 1 non drug eluted	G2: Formal Sector	Female	18 to 24	OK:		
12 CAR_6	Non-drug eluted stenting with	G2: Formal Sector	Female	18 to 24	OK:		
13 CAR_7	Drug eluted 1 stent stenting (S	G2: Formal Sector	Female	18 to 24	OK:		
14 CAR_8	One Drug eluted stent one non	G2: Formal Sector	Female	18 to 24	OK:		
15 CAR_9	Drug eluted 2 stent stenting (S	G2: Formal Sector	Female	18 to 24	OK:		
16 CDT_1	CT angiography is 1 sector (incl	G2: Formal Sector	Female	18 to 24	OK:		
17 CDT_10	Magnetic resonance imaging (c	G2: Formal Sector	Female	18 to 24	OK:		
18 CDT_11	Magnetic resonance imaging (r	G2: Formal Sector	Female	18 to 24	OK:		
19 CDT_12	The citizen computer X-ray tom	G2: Formal Sector	Female	18 to 24	OK:		
20 CDT_2	CT angiography is 1 sector (incl	G2: Formal Sector	Female	18 to 24	OK:	134,500.00	67,250.00
21 CDT_3	Computed tomography angiogr	G2: Formal Sector	Female	18 to 24	OK:		
22 CDT_4	Computed tomography angiogr	G2: Formal Sector	Female	18 to 24	OK:		
23 CDT_5	Computed tomography angiogr	G2: Formal Sector	Female	18 to 24	OK:		
24 CDT_6	Computed tomography angiogr	G2: Formal Sector	Female	18 to 24	OK:		

1.1B Growth Target Populations 1.2A Service Categories 1.2B Health Needs 1.3 Health Supply - Costs 1.4 Benefit Packages 1.5 Ref

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells

100.00 Input cell, unrestricted

100.00 Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)

100.00 Input cell, select option from list

Free Text Cells

Note Input cell to write comments

Calculation Cells

200.00 Linked and/or Calculation cell (locked); input to cell from another tab

- Unrestricted input cells that accept alphanumeric keys;
- Restricted input cells for encoding only positive numeric values;
- Restricted input cells for selection from a drop-down list of inputs defined on another worksheet;
- Free text cells for adding corresponding explanations, comments, sources, or other helpful texts pertaining to encoded information; and
- Linked calculation cells (i.e., Code, Service provided, Target population, Sex, Age bracket) that are locked and entries came from another tab.

Service

Columns A to F of this worksheet (Figure 148) refers to the service information linked to, and direct copies of the “1.2B Health Needs” worksheet (Figure 149), specifically column A (“Numbering”), column B (“Code”), column D (“Service Provided”), column F (“Target Population”), column G (“Sex”), and combination of information on column H (“Lower bound age”) and column I (“Upper bound age”) for the “Age bracket” column F. If the lower bound is undefined from the source worksheet, it is automatically converted into “youngest” in this worksheet. If upper bound is undefined from the source worksheet, it is labeled as the “oldest” in this worksheet.

Figure 148: Columns in 1.3 Health Supply–Costs Worksheet Linked to 1.2B Health Needs Worksheet

	A	B	C	D	E	F	G	H	I	J
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

Figure 149: Source Columns in the 1.2B Health Needs Worksheet

	A	B	C	D	E	F	G	H	I
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Costs

The next portion of this worksheet is for recording health costs for up to five listings (Figure 150):

- **Columns H, I, J** for “Cost listing 1,”
- **Columns M, N, O** “Cost listing 2,”
- **Columns R, S, T** for “Cost listing 3,”
- **Columns W, X, Y** for “Cost listing 4,” and
- **Columns AB, AC, AD** for “Cost listing 5.”

Beginning row 21 provides recording of the costs of services. Specifically, **columns H, M, R, W, and AB** provide input cells for “Cost of Care” (Figure 154).

Figure 154: Input Cells of Cost of Care in the 1.3 Health Supply—Costs Worksheet

The screenshot shows the 1.3 Health Supply—Costs Worksheet. The worksheet is organized into columns F through AD and rows 10 through 27. Red boxes highlight the input cells for 'Cost of Care' in columns H, M, R, W, and AB, rows 21 through 27. The worksheet also includes sections for Notes, P1 (Combination), P2 (Social Package Prices), and P3 through P5 (Currency).

The user may also opt to provide separate outpatient and inpatient costs associated with the health service, if available. Specifically, **columns I, N, S, X, and AC** provide input cells for optional “Cost OPD” or outpatient costs (Figure 155) and **columns I, N, S, X, and AC provide** input cells for optional “Cost IPD” or inpatient costs (Figure 156).

Figure 155: Input Cells of Cost Outpatient Day in the 1.3 Health Supply—Costs Worksheet

The screenshot shows the 1.3 Health Supply—Costs Worksheet. The worksheet is organized into columns F through AD and rows 10 through 27. Red boxes highlight the input cells for 'Cost OPD' in columns I, N, S, X, and AC, rows 21 through 27. The worksheet also includes sections for Notes, P1 (Combination), P2 (Social Package Prices), and P3 through P5 (Currency).

Figure 156: Input Cells of Cost Inpatient Day in the 1.3 Health Supply—Costs Worksheet

The screenshot shows the 1.3 Health Supply—Costs Worksheet. The worksheet is organized into columns F through AD and rows 10 through 27. Red boxes highlight the input cells for 'Cost IPD' in columns I, N, S, X, and AC, rows 21 through 27. The worksheet also includes sections for Notes, P1 (Combination), P2 (Social Package Prices), and P3 through P5 (Currency).

The user must be careful though to ensure that “Cost OPD” is only filled up for outpatient services, while “Cost IPD” for inpatient services.

For verification purposes, verification cells **beginning row 21 under columns G** were included to ensure that if the user inputs data under the “Cost OPD” in column I and/or “Cost IPD” in column J, the total value of the OP and IP costs will not exceed the total “Cost of Care” in column H. If the outpatient and/or inpatient costs breakdown exceeds the total cost, entries under column G will change from “OK” to “Check” remark (Figure 157).

Figure 157: Verification Cells in the 1.3 Health Supply—Costs Worksheet

Age bracket	Cost of Care	Cost OPD	Cost IPD	Verification (G)
18 to 24	OK			OK
18 to 24	OK			OK
18 to 24	OK			OK
18 to 24	OK			OK
18 to 24	OK			OK
18 to 24	OK			OK
18 to 24	OK			OK

F. The 1.4 Benefit Packages Input Sheet

This worksheet (Figure 158) provides the list of **Benefit Packages** to be included in the SLAM analysis. It also allows the user to define

- whether the services defined in the 1.2A Service Category worksheet are included in one or more benefit packages,
- where enrollees may utilize healthcare services, and
- whether the enrollee can access inpatient and/or outpatient services.

Figure 158: Preview of the 1.4 Benefit Packages Worksheet

Service	Service provided	Defined Target Populations	Include Service in Benefit Package(s)?	Total	OPD only	IPD only	Distribution	OPD and IPD?
1	Burn treatment cases	G1: Children	All	-	-	-	100%	OPD and IPD
2	Coronary angiography (including contrast material cost of one)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
3	Drug eluted 2 stent stenting (in the State)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
4	One Drug eluted stent two non medical eluted stent	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
5	Stenting with drug eluted 3 stent	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
6	Stenting with drug eluted 4 stent	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
7	Magistral and peripheral artery stenting, the stent	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
8	Coronary artery balloon dilatation using one cylinder	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
9	Coronary artery balloon dilatation using two cylinders	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
10	Coronary angiography (including the value of contrast material)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
11	Stenting with 1 non drug eluted stent (SS and CP)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
12	Non-drug eluted stenting with one stent	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
13	Drug eluted 1 stent stenting (SS and CP)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
14	One Drug eluted stent one non medical eluted stent (SS and CP)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
15	Drug eluted 2 stent stenting (SS and CP)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
16	CT angiography is 1 sector (including the value of contrast material)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
17	Magnetic resonance imaging (contrast material without cpi)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
18	Magnetic resonance imaging (including the value of contrast material)	G2: Formal Sector	All	-	-	-	100%	OPD and IPD
19	The citizen computer X-ray tomography is more than 1 plan	G2: Formal Sector	All	-	-	-	100%	OPD and IPD

Similar with “1.3 Health Supply – Costs” worksheet, **columns A to F of this worksheet** (Figure 160) refers to the service information linked to, and direct copies of the “1.2B Health Needs” worksheet, specifically column A (“Numbering”), column B (Code), column D (Service Provided), column F (Target Population), column G (Sex), and combination of information on column H (Lower bound age) and column I (Upper bound age) for the Age bracket column F.

Figure 160: Linked Service Information in the 1.4 Benefit Packages Worksheet

	A	B	C	D	E	F	G	H
14		Service		Defined Target Populations				Package(s)?
15		Code	Service provided	Target group	Sex			
17	1	BUR_1	Burn treatment cases	G1: Children	Female			All
18	2	CAR_1	Coronary geography (including contrast material cost of a	G2: Formal Sector	Female			All
19	3	CAR_10	Drug eluted 2 stent stenting (in the State)	G2: Formal Sector	Female			All
20	4	CAR_11	One Drug eluted stent two non medical eluted stent	G2: Formal Sector	Female			All
21	5	CAR_12	Stenting with drug eluted 3 stent	G2: Formal Sector	Female	18 to 24		All
22	6	CAR_13	Stenting with drug eluted 4 stent	G2: Formal Sector	Female	18 to 24		All
23	7	CAR_14	Magistral and peripheral artery stenting, the stent	G2: Formal Sector	Female	18 to 24		All

Column H (Figure 161) requires the users to determine whether each **Service provided** in column C is included in the Benefit Packages defined in cells C8 to C10. A drop-down menu is provided to allow users to select

- “1,” “2,” or “3” entries indicate that the service is exclusively covered by the first, second, or third Benefit Package, respectively;
- “1 and 2” if the service is covered by the both the first and second Benefit Package;
- “1 and 3” if the service is covered by the both the first and third Benefit Package;
- “2 and 3” if the service is covered by the both the second and third Benefit Package;
- “All” if the service is covered by all Benefit Packages specified; and
- “None” if the service is not covered by any of the three Benefit Packages.

Figure 161: Whether Each Health Service Is Included in Identified Benefit Packages

	A	B	C	D	E	F	G	H	I
1	1.4 Assumptions - Benefit Packages Definition								
2									
3	Benefit Package Definition								
4	On this Tab define: (1) Whether Service is included in one or more Benefit Packages; (2) Where enrollees utilize Services (distribution in % over up								
5	Note: selecting IPD (Inpatient) and / or OPD (Outpatient) only makes sense if costs for each specified on Tab 1.3.								
6	Each list may be activated or deactivated depending on which set of health service costs will be used.								
7	To analyze more than 3 packages, use another SLAM file.								
8	Benefit Package 1: Benefits are the same for all								
9	Benefit Package 2: BP2								
10	Benefit Package 3: BP3								
11									
12									
13									
14		Service		Defined Target Populations					
15		Code	Service provided	Target group	Sex	Age group			
17	1	BUR_1	Burn treatment cases	G1: Children	Female	18 to 24			
18	2	CAR_1	Coronary geography (including contrast material cost of a	G2: Formal Sector	Female	18 to 24			
19	3	CAR_10	Drug eluted 2 stent stenting (in the State)	G2: Formal Sector	Female	18 to 24			
20	4	CAR_11	One Drug eluted stent two non medical eluted stent	G2: Formal Sector	Female	18 to 24			
21	5	CAR_12	Stenting with drug eluted 3 stent	G2: Formal Sector	Female	18 to 24			
22	6	CAR_13	Stenting with drug eluted 4 stent	G2: Formal Sector	Female	18 to 24			

ATTENTION:
within a Benefit Package there should be no overlap in Target Populations for the same Service. Include Service in Benefit Package(s)?

All

In tagging the coverage of the services, there is no need to select options in each of the cells in column H. The program allows for copying of cells within the same column of identifying service inclusion in the Benefit Packages.

The SLAM analysis requires that within a Benefit Package, there should be no overlaps in Target Populations for the same service.

Cost of Care and Distribution of Utilization

The next portion of this worksheet displays data fields for up to five providers: (i) the costs of care per service that were defined earlier in 1.3 Health Supply–Costs worksheet; and (ii) input cells for recording of the distribution, where the patients go for the specified services (Figure 162).

Specifically,

- For “Provider 1,” **columns J to L** show the linked cost data and **columns M and N** provide the distribution input cells;
- For “Provider 2,” **columns P to R** show the linked cost data and **columns S and T** provide the distribution input cells;
- For “Provider 3,” **columns V to X** show the linked cost data and **columns Y and Z** provide the distribution input cells;
- For “Provider 4,” **columns AB to AD** show the linked cost data and **columns AE and AF** provide the distribution input cells;
- For “Provider 5,” **columns AH to AJ** show the linked cost data and **columns AK and AL** provide the distribution input cells.

Figure 162: Data Fields for up to Five Providers in the 1.4 Benefit Packages Worksheet

The screenshot displays the 1.4 Benefit Packages Worksheet with data fields for five providers. Each provider section is outlined in red and includes a 'Notes' field, a 'Currency' dropdown, a 'Cost of Care' table, and a 'Distribution' table.

Provider 1 (Columns J to L): Notes: P1: Combination (Social and State) Active. Currency: AMD. Cost of Care table: Total, OPD only, IPD only. Distribution table: 100% QPD and IPD.

Provider 2 (Columns P to R): Notes: P2: Social Package Prices Inactive. Currency: AMD. Cost of Care table: Total, OPD only, IPD only. Distribution table: 100% QPD and IPD.

Provider 3 (Columns V to X): Notes: P3: Inactive. Currency: -. Cost of Care table: Total, OPD only, IPD only. Distribution table: 100% QPD and IPD.

Provider 4 (Columns AB to AD): Notes: P4: Inactive. Currency: -. Cost of Care table: Total, OPD only, IPD only. Distribution table: 100% QPD and IPD.

Provider 5 (Columns AH to AJ): Notes: P5: Inactive. Currency: -. Cost of Care table: Total, OPD only, IPD only. Distribution table: 100% QPD and IPD.

For each provider listing, **row 8** (Figure 163) provides input cells for “Notes” and other remarks to be recorded.

Figure 163: Input Cells on the Notes for Distribution per Provider Listing in the 1.4 Health Supply—Costs Worksheet

The screenshot displays the 1.4 Health Supply—Costs Worksheet. It features five provider listings, each with a set of input cells for Notes and distribution data. The providers are labeled Provider 1 through Provider 5. Each provider listing includes a 'Notes' field (row 8) and a table for distribution data (rows 15-20). The distribution data table has columns for 'Total', 'OPD only', 'IPD only', and 'OPD and IPD?'. The 'OPD and IPD?' column is further divided into '100%' and 'OPD and IPD?'. The 'Notes' field is highlighted with a red border. The 'OPD and IPD?' column is highlighted with a blue border. The '100%' and 'OPD and IPD?' sub-columns are highlighted with a light blue border.

Meanwhile, **row 11** shows the “Provider name” picked up from “1.3 Health Supply Costs” worksheet, specifically **columns J to L** for “P1;” **columns P to R** for “P2;” **columns V to X** for “P3;” **columns AB to AD** for “P4;” and **columns AH to AJ** for “P5” (Figure 164).

Figure 164: Linked Cells for Provider Name in the 1.4 Benefit Packages Worksheet

The screenshot displays the 1.4 Benefit Packages Worksheet. It features five provider listings, each with a set of input cells for Notes and distribution data. The providers are labeled Provider 1 through Provider 5. Each provider listing includes a 'Notes' field (row 8) and a table for distribution data (rows 15-20). The distribution data table has columns for 'Total', 'OPD only', 'IPD only', and 'OPD and IPD?'. The 'OPD and IPD?' column is further divided into '100%' and 'OPD and IPD?'. The 'Notes' field is highlighted with a red border. The 'OPD and IPD?' column is highlighted with a blue border. The '100%' and 'OPD and IPD?' sub-columns are highlighted with a light blue border. The 'Provider name' is linked to the 'Notes' field for each provider, as indicated by the red borders around the 'Notes' fields and the 'Provider name' cells in row 11.

Next to the provider name is an “Activation cell,” specifically in **cell M11** for “P1;” **cell S11** for “P2;” **cell Y11** for “P3;” **cell AE11** for “P4;” and **cell AK11** for “P5” (Figure 165).

Figure 165: Activation Cells per Provider Listing in the 1.4 Benefit Packages Worksheet

	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
7	Notes:					Notes:					Notes:						
8																	
10	P1: Combination (Social and State)					P2: Social Package Prices					P3:						
11	Active					Inactive					Inactive						
12	Provider 1					Provider 2					Provider 3						
14	Cost of Care			Distribution	OPD and IPD?	Cost of Care			Distribution	OPD and IPD?	Cost of Care			Distribution	OPD and IPD?		
15	Total	OPD only	IPD only			Total	OPD only	IPD only			Total	OPD only	IPD only				
17	-	-	-	100%	OPD and IPD	-	-	-			-	-	-				
18	-	-	-	100%	OPD and IPD	-	-	-			-	-	-				
19	-	-	-	100%	OPD and IPD	-	-	-			-	-	-				
20	-	-	-	100%	OPD and IPD	-	-	-			-	-	-				

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
7	Notes:					Notes:						
8												
10	P4:					P5:						
11	Inactive					Inactive						
12	Provider 4					Provider 5						
14	Cost of Care			Distribution	OPD and IPD?	Cost of Care			Distribution	OPD and IPD?		
15	Total	OPD only	IPD only			Total	OPD only	IPD only				
17	-	-	-			-	-	-				
18	-	-	-			-	-	-				
19	-	-	-			-	-	-				
20	-	-	-			-	-	-				

To use the cost data picked up from the 1.3 Health Supply Costs worksheet and specify distribution utilization of the said services for identified providers, the user must set the respective activation cell into active status by using the drop-down list provided (e.g., in “P1”). However, if the cost data is not available for a provider (e.g., in P3–P5), as defined in the 1.3 Health Supply Costs worksheet, their respective activation cell in this 1.4 Benefit Packages worksheet must be set to inactive for the SLAM program to work.

Suppose P2 (i.e., social package prices) that has cost data in the 1.3 Health Supply–Costs worksheet will be used in analysis. Linked data will automatically appear in the 1.4 Benefit Packages worksheet (e.g., columns P–R) if the user selects “Active” in cell S11 and the “Distribution” column (e.g., column S) is filled (Figure 166).

Figure 166: Activating Providers in the 1.4 Benefit Packages Worksheet

Provider 1					Provider 2				
Notes:					Notes:				
P1: Combination (Social and State)					P2: Social Package Prices				
Active					Inactive				
Currency	AMD				Currency	AMD			
Cost of Care			Distribution	OPD and IPD?	Cost of Care			Distribution	OPD and IPD?
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
134,500.00	67,250.00	67,250.00	100%		134,500.00	67,250.00	67,250.00		
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
-	-	-	100%		-	-	-		
180,000.00	90,000.00	90,000.00	100%		180,000.00	90,000.00	90,000.00		
117,500.00	58,750.00	58,750.00	100%		117,500.00	58,750.00	58,750.00		

Provider 1					Provider 2				
Notes:					Notes:				
P1: Combination (Social and State)					P2: Social Package Prices				
Active					Active				
Currency	AMD				Currency	AMD			
Cost of Care			Distribution	OPD and IPD?	Cost of Care			Distribution	OPD and IPD?
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
134,500.00	67,250.00	67,250.00	100%		134,500.00	67,250.00	67,250.00	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
-	-	-	100%		-	-	-	100%	
180,000.00	90,000.00	90,000.00	100%		180,000.00	90,000.00	90,000.00	100%	
117,500.00	58,750.00	58,750.00	100%		117,500.00	58,750.00	58,750.00	100%	

Notes: AMD = Armenian dram, IPD = inpatient days, OPD = outpatient days.

Below the “Provider Name” is the “Currency” picked up by the SLAM program from the 1.0 General Assumptions worksheet. Specifically, it can be seen in **cell K13** for P1, **cell S11** for P2, **cell Y11** for P3, **cell AE11** for P4, and **cell AK11** for P5 (Figure 167).

Figure 167: Linked Cells for Currency in the 1.4 Benefit Packages Worksheet

The screenshot displays the 1.4 Benefit Packages Worksheet with five provider sections (Provider 1 to Provider 5). Each section includes a 'Notes' field, a 'Currency' dropdown (set to AMD), and a table for 'Cost of Care' distribution. The distribution table has columns for 'Total', 'OPD only', 'IPD only', and 'OPD and IPD?'. The 'OPD and IPD?' column is highlighted in blue.

Notes: AMD = Armenian dram, IPD = inpatient days, OPD = outpatient days.

Only beginning in **row 17** can the costs of care and input cells for distribution of utilization be seen. The distribution column (e.g., column M for the first provider) requires the user to define the distribution of where the patients go for the specific services listed in column C (Figure 168).

Figure 168: Input Cells for Distribution of Cost of Care in the 1.4 Benefit Packages Worksheet

The screenshot displays the 1.4 Benefit Packages Worksheet with a focus on the 'Distribution' column. The 'Distribution' column is highlighted in blue. A red box highlights the 'Distribution' column and the 'Cost of Care' column. A text box explains the Simple Linear Actuarial Model and the distribution of patients.

Note: Screenshot contains hidden rows for illustration purposes only.

This means that if costs of care (Figure 169) are available for the first provider (P1, columns J–L), second provider (columns P–R), third provider (columns V–X), fourth provider (columns AB–AD), or fifth provider (columns AH–AJ), percent shares summing to 100% must be distributed to these five costs data.

Figure 169: Linked Cells for Cost of Care in the 1.4 Benefit Packages Worksheet

	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
5														
6		ATTENTION:												
7		within a Benefit												
8		Package there												
9		should be no												
10		overlap in Target												
11		Populations for a												
12		same Service												
13		Include Service in												
14		Benefit												
15		Package(s)?												
16														
17		All												
18		All												
19		All												
20		All												
21		All												
22		All												

Notes: AMD = Armenian dram, IPD = inpatient days, OPD = outpatient days. Screenshot contains hidden rows for illustration purposes only.

In the example provided in this manual, there is only one provider (e.g., P1: Combination of Social and State). Thus, the entry in Column M for each service defined must be 100% (Figure 169).

Figure 170: Sample Distribution in the 1.4 Benefit Packages Worksheet

	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
5		ATTENTION:												
6		within a Benefit												
7		Package there												
8		should be no												
9		overlap in Target												
10		Populations for a												
11		same Service												
12		Include Service in												
13		Benefit												
14		Package(s)?												
15														
16														
17		All												
18		All												
19		All												
20		All												
21		All												
22		All												
23		All												
24		All												
25		All												
26		All												
27		All												
28		All												
29		All												
30		All												
31		All												
32		All												
33		All												
34		All												
35		All												
36		All												
37		All												
38		All												
39		All												
40		All												
41		All												
42		All												
43		All												

Notes: AMD = Armenian dram, IPD = inpatient days, OPD = outpatient days. Screenshot contains hidden rows for illustration purposes only.

The OPD and IPD column (i.e., column N for the first provider) allows the user to estimate the costs pertaining to the outpatient service (OPD only), inpatient service (IPD only), or both components (OPD and IPD) on each of the defined services. If left empty, the program will assume that OPD and IPD components should be used in the analysis. To ensure that calculations are done for each service component, the costs should be defined in the 1.3 Health Supply–Costs worksheet. This means that if separate costs for OPD and IPD are not available in the health costs tab, then the user must either select OPD and IPD or leave the appropriate cell in column N blank (Figure 171).

Figure 171: Input Cells for Outpatient Days or Inpatient Days Distribution in the 1.4 Benefit Packages Worksheet

1	2	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
5			ATTENTION:												
6			within a Benefit												
7			Package there												
8			should be no												
9			overlap in Target												
10			Populations for												
11			the same Service												
12			Include Service in												
13			Benefit												
14			Package(s)?												
15															
16															
17			All												
18			All												
19			All												
20			All												
21			All												
22			All												

Notes: AMD = Armenian dram, IPD = inpatient days, OPD = outpatient days.

Control and Validation

Column AN (Indicator Distribution) is a validation data field that computes the total distribution of percent shares across all five providers. If the set distribution is not 100%, a warning informing the user of the data inconsistency will be displayed in **column AO** ("Warning explanation") (Figure 172).

Figure 172: Warning Explanation Columns in the 1.4 Benefit Packages Worksheet

	I	J	K	L	M	N	O	P	Q	R	S	T	U	AN	AO																					
7	Notes:							Notes:							<div>Indicator distribution</div> <div>Warning explanation</div>																					
8																																				
9																																				
10																																				
11	P1: Combination (Social and State)							Active		P2: Social Package Prices							Active																			
12																																				
13	Currency														AMD		Currency														AMD					
14	Cost of Care														Distribution		OPD and IPD?		Cost of Care														Distribution		OPD and IPD?	
15	-														-		100%		-														-		100%	
16	-														-		100%		-														-		100%	
17	-														-		100%		-														-		100%	
18	134,500.00														67,250.00		67,250.00		134,500.00														67,250.00		67,250.00	
19																																				
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- **OPD** cost and **IPD** cost (i.e., columns AU and AV, respectively) are computed the same way **total cost** is calculated when applicable data of these components are available (i.e., cost of care in the 1.3 Health Supply–Costs worksheet).
- **Number of bed days** (column AW) is picked up by the program from the 1.2B Health Needs worksheet.

Figure 173: Indicative Results for the First Year in the 1.4 Benefit Packages Worksheet

AG	AH	AI	AJ	AK	AL	AM	AN	AO	AT	AU	AV	AW
7	Notes:											
8												
9												
10												
11	PS: inactive											
12												
13	Currency -											
14	Cost of Care Distribution OPD and IPD? Indicator distribution Warning explanation											
15	Total	OPD only	IPD only						Total cost	OPD	IPD	Nbr of bed days
17	-	-	-					100%	-	-	-	-
36	-	-	-					100%	1,342,370	671,185	671,185	-
37	-	-	-					100%	-	-	-	-
38	-	-	-					100%	-	-	-	-
39	-	-	-					100%	-	-	-	-
40	-	-	-					100%	-	-	-	-
41	-	-	-					100%	-	-	-	-
42	-	-	-					100%	1,796,481	898,240	898,240	-
43	-	-	-					100%	1,172,703	586,351	586,351	-

Notes: IPD = inpatient days, OPD = outpatient days.

G. The 1.5 Revenues Input Sheet

This worksheet (Figure 174) provides the space for inputting the current premiums levied to various member groups. If left empty, the SLAM results in Dashboard and the 3.1 Results worksheets will show the required funds for the healthcare provision to the number of members defined in the 1.1A Target Populations worksheet.

Figure 174: Preview of the 1.5 Revenues Worksheet

1.5 Assumptions - Revenues from Premiums and Subsidies

On this Tab the premiums are defined.
If left empty, the results will show the required funds for the health care provision.

Contribution currency: AMD

Notes:

Target Group is set to: Active

Set Individual / Group rates: Individual

Target Group is set to: Active

Set Individual / Group rates: Individual

Target Group is set to: Active

Set Individual / Group rates: Individual

Target Group is set to: Active

Set Individual / Group rates: Individual

Target Group is set to: Active

Set Individual / Group rates: Individual

Target Group is set to: Active

Set Individual / Group rates: Individual

Set Individual rates in local currency: AMD

Age group	G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
(0 - 1)												
(2 - 7)												
(8 - 9)												
(10 - 14)												
(15 - 17)												
(18 - 19)												
(20 - 24)												
(25 - 29)												
(30 - 34)												
(35 - 39)												
(40 - 44)												
(45 - 49)												
(50 - 54)												
(55 - 59)												
(60 - 64)												
(65 - 69)												
(70 - 74)												
(75 - 79)												

Notes:

1.2A Service Categories 1.2B Health Needs 1.3 Health Supply - Costs 1.4 Benefit Packages 1.5 Revenues 1.6 Uptake and Retention

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells	
<input type="text" value="100.00"/>	Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
<input type="text" value="100.00"/>	Input cell, select option from list
<input type="text" value="100.00"/>	Input cell, select option from list, input defined on another sheet
<input type="text" value="100.00"/>	Input cell <i>contents ignored</i> (not included in calculations)
Free Text Cells	
<input type="text" value="Note"/>	Input cell to write comments
Calculation Cells	
<input type="text" value="200.00"/>	Linked and/or Calculation cell (locked); input to cell from another tab
<input type="text" value="200.00"/>	Output cell (locked)
Buttons	
<input type="button" value="Add Item"/>	Button to perform action such as adding or deleting rows and/or columns, selecting an option or performing an action
Green text on a button means an item is added, red text means an item is deleted	

- Restricted input cells for encoding only positive numeric values;
- Restricted input cells for selection from a drop-down list;
- Restricted input cells for selection from a drop-down list of inputs defined on another worksheet;
- Ignored input cells where entries are not considered in calculations and analyses;
- Free text cells for adding corresponding explanations, comments, sources, or other helpful texts pertaining to encoded information;
- Linked calculation cells (i.e., Age bracket) that are locked and entries came from another tab;
- Output cells that are locked for editing and show results of calculations within the worksheet; and
- Buttons with blue text for applying an action.

For discussion purposes, this worksheet is divided into three partitions: (i) prerequisite information, (ii) individual rates, and (iii) group rates.

Prerequisite Information

This portion of the worksheet (Figure 175) shows essential information to be used in defining the revenue rates. Contents of this worksheet include the **contribution currency** in **cell D5**; input cells for **notes** in **cells F5 to G5**; the **target groups** in **row 8**; respective **group status** (i.e., active or inactive) in **row 10**; and restricted input cells for setting **individual or group rates** in **row 12**.

Figure 175: Prerequisite Information of the 1.5 Revenues Worksheet

The **contribution currency** in **cell D5** refers to **Currency 1** used for projections defined in the 1.0 General Assumptions worksheet. On the other hand, the user may input notes in unrestricted **cells F5–G5** that accepts alphanumeric characters (Figure 176).

Figure 176: Linked Cell for Contribution Currency and Input Cell for Notes in the 1.5 Revenues Worksheet

Note: AMD = Armenian dram.

Each **Target Group** of population defined in “1.1A Target Populations” worksheet also has their own partition in this worksheet (Figure 177):

- **Columns D and E** for “Group 1;”
- **Columns G and H** “Group 2;”
- **Columns J and K** for “Group 3;”
- **Columns M and N** for “Group 4;”
- **Columns P and Q** for “Group 5;” and
- **Columns S and T** for “Group 6.”

Figure 177: Target Group Portions in the 1.5 Revenues Worksheet

Age group	G1: Children	G2: Formal Sector	G3: Disabled	G4: Pensioners	G5: State Order - Others	G6: Everyone Else
[0 - 1]	Group 1					
[2 - 7]		Group 2				
[8 - 9]			Group 3			
[10 - 14]				Group 4		
[15 - 17]					Group 5	
[18 - 19]						Group 6
[20 - 24]						

For each target member group, the **target group status** included in the analysis (i.e., active or inactive) is automatically picked up from the 1.1A Target Populations worksheet. It is shown specifically in **cells E10, H10, K10, N10, Q10, and T10** (Figure 178) for the six groups, respectively.

Figure 178: Linked Cells for Target Group Status in the 1.5 Revenues Worksheet

Target Group is set to:	Set Individual / Group rates:
G1: Children	Individual
G2: Formal Sector	Individual
G3: Disabled	Individual
G4: Pensioners	Individual
G5: State Order - Others	Individual
G6: Everyone Else	Individual

Just below the **target group status**, specifically in **cells E12, H12, K12, N12, Q12, and T12** (Figure 179), the user will be asked to determine for each subpopulation, through a drop-down menu, whether the premium rate is for individual members (“Individual”) or a group of members (“Group”).

Figure 179: Input Cells for Setting Individual or Group Rates in the 1.5 Revenues Worksheet

Target Group is set to:	Set Individual / Group rates:
G1: Children	Individual
G2: Formal Sector	Individual
G3: Disabled	Individual
G4: Pensioners	Individual
G5: State Order - Others	Individual
G6: Everyone Else	Individual

For each age group, the user must define the current premium rates collected by the health insurance program. The cells are restricted to accept only positive values for premium rates (Figure 182).

Figure 182: Restricted Cells to Accept Only Positive Values for Premium Rates

Note: AMD = Armenian dram.

Meanwhile, **row 40** provides space for recording specific notes per group (Figure 183).

Figure 183: Input Cells for Notes on Individual Rates in the 1.5 Revenues Worksheet

Note: AMD = Armenian dram.

Group Rates

An example of health insurance premiums applied for as a **group rate** is a family wherein the coverage of the family head (“principal”) extends to his/her spouse and young children (“dependents”).

If the group option is selected as the set rate in **row 12** drop-down list (Figure 184), then the user must record information for group rates beginning row 42 (Figure 185).

Figure 184: Input Cells for Setting Up Rates in the 1.5 Revenues Worksheet

Figure 185: Set Group Rates Portion in the 1.5 Revenues Worksheet

For instance, the “Group” option is selected in **cell E12** for “G1: Ever enrolled population” (Figure 186).

Figure 186: Setting Up Group Rates in 1.5 Revenues Worksheet

Rows 48 and below under columns D and E are then activated (Figure 187).

Figure 187: Input Cells for Group Rates in the 1.5 Revenues Worksheet

Before inputting the premium rates, beginning **row 55**, the user is required to define a **typical average group** composition for each **target group**. This includes information on the number of adults (**row 48**), number of children (**row 49**), and the maximum age for children (**row 50**).

For example, a “typical group” could be composed of two adults (i.e., head and spouse) and two children with a maximum age of 17 selected from the age drop-down list (Figure 188).

Figure 188: Input Cells for Typical Average Group in the 1.5 Revenues Worksheet

Note: AMD = Armenian dram.

After completing the required information, the user must click the [Apply](#) button (Figure 189).

Figure 189: The Apply Buttons in Visual Basic for Applications

	A	B	C	D	E	F	G	H	I	J	K	
42		Set Group rates										
44		Group rates can be used for households / families										
45		Define "a typical average group" composition for each Target Group.										
48		Number of adults:	2.0	Apply simplified distribution		1.0	Apply simplified distribution		2.0	Apply simplified distribution		
49		Number of children:	2.5			4.0			5.0			
50		Set age limit of "children":	17	Apply		19	Apply		14	Apply		
51												
52		Set Group rates in local currency: AMD	50.0			50.0			50.0			
53			G1: Children				G2: Formal Sector		G3: Disabled			
54		Age group	Females	Males		Females	Males		Females	Males		
55	1	[0 - 1]	0.3	0.3								
56	2	[2 - 7]	0.9	0.9								
57	3	[8 - 9]	-	-								
58	4	[10 - 14]	-	-								

Note: AMD = Armenian dram.

This Visual Basic for Applications (VBA) button applies a simple distribution of the number of the members defined for the "typical average group" over the age groups (Figure 190). The model does not consider the distribution between females and males. It also does not take into consideration which age groups are not covered. For instance, since Group 1 is defined as "children," even if the set age limit of "children" is 17, only those applicable age brackets of the "children" group will be covered by the distribution.

Figure 190: Applying Simplified Distributions in 1.5 Revenues Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
42		Set Group rates																				
44		Group rates can be used for households / families																				
45		Define "a typical average group" composition for each Target Group.																				
48		Number of adults:	2.0	Apply simplified distribution		1.0	Apply simplified distribution		2.0	Apply simplified distribution		3.0	Apply simplified distribution		2.0	Apply simplified distribution		2.0	Apply simplified distribution			
49		Number of children:	2.5			5.0			4.0			4.0			2.3			2.3				
50		Set age limit of "children":	17	Apply		14	Apply		17	Apply		17	Apply		17	Apply		17	Apply			
51																						
52		Set Group rates in local currency: AMD	50.0			50.0			50.0			50.0			50.0			50.0				
53			G1: Children				G3: Disabled		G4: Pensioners		G5: State Order - Others		G5: State Order - Others									
54		Age group	Females	Males		Females	Males		Females	Males		Females	Males		Females	Males		Females	Males			
55	1	[0 - 1]	0.3	0.3																		
56	2	[2 - 7]	0.9	0.9																		
57	3	[8 - 9]	-	-																		
58	4	[10 - 14]	-	-																		
59	5	[15 - 17]	-	-																		
60	6	[18 - 19]	-	-																		
61	7	[20 - 24]	-	-																		
62	8	[25 - 29]	-	-																		
63	9	[30 - 34]	-	-																		
64	10	[35 - 39]	-	-																		
65	11	[40 - 44]	-	-																		
66	12	[45 - 49]	-	-																		
67	13	[50 - 54]	-	-																		
68	14	[55 - 59]	-	-																		
69	15	[60 - 63]	-	-																		
70	16	[64 - 69]	-	-																		
71	17	[70 - 74]	-	-																		
72	18	[75 -]	-	-																		
74		Subtotals:	1.3	1.3		-	-		3.5	3.5		1.0	1.0		1.0	1.0		1.0	1.0			
75		Notes:			Notes:			Notes:			Notes:			Notes:			Notes:			Notes:		
76																						

Note: AMD = Armenian dram.

The user must then input the *group rate in local currency* in **row 52** (Figure 191).

Figure 191: Input Cell for Group Rates in Local Currency in the 1.5 Revenues Worksheet

	A	B	C	D	E	F	G	H	I	J	K	
42		Set Group rates										
44		Group rates can be used for households / families										
45		Define "a typical average group" composition for each Target Group.										
48		Number of adults:	2.0	Apply simplified distribution		1.0	Apply simplified distribution		2.0	Apply simplified distribution		
49		Number of children:	2.5	Apply simplified distribution		4.0	Apply simplified distribution		5.0	Apply simplified distribution		
50		Set age limit of "children":	17	Apply		19	Apply		14	Apply		
51												
52		Set Group rates in local currency: AMD	50.0			50.0			50.0			
53			G1: Children		G2: Formal Sector		G3: Disabled					
54		Age group	Females	Males	Females	Males	Females	Males	Females	Males		
55	1	[0 - 1]	0.3	0.3								
56	2	[2 - 7]	0.9	0.9								
57	3	[8 - 9]	-	-								
58	4	[10 - 14]	-	-								

Note: AMD = Armenian dram.

To check for the appropriate distribution of members, **row 74** is provided for the calculation of *subtotals* (Figure 192).

Figure 192: Subtotals Output Cells in the 1.5 Revenues Worksheet

	A	B	C	D	E	F	G	H	I	J	K	
42		Set Group rates										
44		Group rates can be used for households / families										
45		Define "a typical average group" composition for each Target Group.										
48		Number of adults:	2.0	Apply simplified distribution		1.0	Apply simplified distribution		2.0	Apply simplified distribution		
49		Number of children:	2.5	Apply simplified distribution		4.0	Apply simplified distribution		5.0	Apply simplified distribution		
50		Set age limit of "children":	17	Apply		19	Apply		14	Apply		
51												
52		Set Group rates in local currency: AMD	50.0			50.0			50.0			
53			G1: Children		G2: Formal Sector		G3: Disabled					
54		Age group	Females	Males	Females	Males	Females	Males	Females	Males		
55	1	[0 - 1]	0.3	0.3								
56	2	[2 - 7]	0.9	0.9								
57	3	[8 - 9]	-	-								
58	4	[10 - 14]	-	-								
59	5	[15 - 17]	-	-								
74		Subtotals:	1.3	1.3								
75		Notes:			Notes:			Notes:				
76												

Note: AMD = Armenian dram.

Meanwhile, **row 76** allows for the recording of any *notes* or remarks regarding the assumption on the number of adults, children, age limit set for the children, and group rates (Figure 193).

FOR YOUR INFORMATION

Cells found in this worksheet include:

Input Cells	
<input type="text" value="100.00"/>	Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)
<input type="text" value="100.00"/>	Input cell, select option from list
Free Text Cells	
<input type="text" value="Note"/>	Input cell to write comments
Calculation Cells	
<input type="text" value="200.00"/>	Linked and/or Calculation cell (locked), input to cell from another tab

- Restricted input cells for encoding only positive numeric values;
- Restricted input cells for selection from a drop-down list;
- Free text cells for adding corresponding explanations, comments, sources, or other helpful texts pertaining to encoded information; and
- Linked calculation cells (i.e., Period of Projections, Target Group Names and Status, Benefit Package Names, and Age bracket) that are locked and entries came from another tab.

This worksheet can be divided into three partitions: (i) prerequisite information, (ii) uptake assumptions, and (iii) retention assumptions.

Prerequisite Information

This portion of the worksheet (Figure 195) shows essential information to be used in defining uptake and retention rates. Contents of this worksheet include the **Period of Projections** in **cell D3**; input cells for **Notes** in **row 6**; the **Target Groups** in **row 7**; and respective **Group Status** (i.e., active or inactive) in **row 9**. The projection period is linked from the 1.0 General Assumptions worksheet, while the target groups and their status are defined from the 1.1A Target Populations worksheet.

Figure 195: Prerequisite Information in the 1.6 Uptake and Retention Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	1.6 Assumptions - Uptake and Retention of Health Insurance Members																			
2																				
3	Projections: 15																			
4																				
5	Notes:																			
6																				
7	G1: Children G2: Formal Sector G3: Disabled G4: Pensioners G5: State Order - Others G6: Everyone Else																			
8	Target Group is Active Target Group is Active Target Group is Active Target Group is Active Target Group is Active Target Group is Active																			
9	set to: set to: set to: set to: set to: set to:																			
10																				

Uptake

The **uptake** portion of the worksheet is from row 11 up to row 105 (Figure 196).

Figure 196: Uptake for each Target Group and Period in the 1.6 Uptake and Retention Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
11	Uptake																			
12	Uptake is the number or percentage of members of the Target Population that enrolls and was not enrolled in the period before.																			
13	Note: there is no automatic check by the model if the input in percentage or numbers makes sense.																			
14	Period 1																			
15	Define for Benefit Package 1																			
16	Name of BP1:																			
17	Benefits are the same for all																			
18	Notes:																			
19																				
20	Use % or #: % percentage of age group																			
21																				
22																				
23	G1: Children G2: Formal Sector G3: Disabled G4: Pensioners G5: State Order - Others G6: Everyone Else																			
24	Age group																			
25	Females Males																			
26	100% 100%																			
27	[0 - 1]																			
28																				
29																				
30																				
31																				
32																				
33																				
34																				
35																				
36																				
37																				
38																				
39																				
40																				
41																				
42																				
43																				
44																				
45																				
46																				
47	Define for Benefit Package 2																			
48	Name of BP2:																			
49	BP2																			
50	Notes:																			
51																				
52	Use % or #: % percentage of age group																			
53																				
54																				
55	G1: Children G2: Formal Sector G3: Disabled G4: Pensioners G5: State Order - Others G6: Everyone Else																			
56	Age group																			
57	Females Males																			
58	100% 100%																			
59	[0 - 1]																			
60																				
61																				
62																				
63																				
64																				
65																				
66																				
67																				
68																				
69																				
70																				
71																				
72																				
73																				
74																				
75																				
76	Define for Benefit Package 3																			
77	Name of BP3:																			
78	BP3																			
79	Notes:																			
80																				
81	Use % or #: % percentage of age group																			
82																				
83																				
84	G1: Children G2: Formal Sector G3: Disabled G4: Pensioners G5: State Order - Others G6: Everyone Else																			
85	Age group																			
86	Females Males																			
87	100% 100%																			
88	[0 - 1]																			
89																				
90																				
91																				
92																				
93																				
94																				
95																				
96																				
97																				
98																				
99																				
100																				
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102																				
103																				
104																				
105																				

Note: Screenshot contains hidden rows for illustration purposes only.

Up to three panels (i.e., one for each benefit package listed in the 1.4 Benefit Packages worksheet) are provided for recording uptake data. Specifically,

- **Rows 18–46** pertain to the panel for Benefit Package 1 (Figure 197),
- **Rows 47–75** pertain to the panel for Benefit Package 2 (Figure 198), and
- **Rows 76–105** pertain to the panel for Benefit Package 3 (Figure 199).

Figure 199: Uptake Panel for Benefit Package 3 in the 1.6 Uptake and Retention Worksheet

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
76	Define for Benefit Package 3																		
77																			
78	Name of BP3:																		
79	BP3																		
80																			
81																			
82																			
83																			
84	Age group																		
85	[0 - 1]																		
86	[2 - 7]																		
87	[8 - 9]																		
88	[10 - 14]																		
89	[15 - 17]																		
90	[18 - 19]																		
91	[20 - 24]																		
92	[25 - 29]																		
93	[30 - 34]																		
94	[35 - 39]																		
95	[40 - 44]																		
96	[45 - 49]																		
97	[50 - 54]																		
98	[55 - 59]																		
99	[60 - 63]																		
100	[64 - 69]																		
101	[70 - 74]																		
102	[75 -]																		
103																			
104																			
105																			

	G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
Use % or #:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
% percentage of age group	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Notes:												

	G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
Use % or #:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
% percentage of age group	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Notes:												

	G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
Use % or #:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
% percentage of age group	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Notes:												

The name of the Benefit Packages is automatically displayed in the upper left corner of each panel (i.e., **cell B21** for Benefit Package 1; **cell B50** for Benefit Package 2; and **cell B79** for Benefit Package 3 [Figure 200]). These names are picked up from the 1.4 Benefit Packages worksheet.

Figure 200: Benefit Package Names for Uptake in 1.6 Uptake and Retention Worksheet

The screenshot displays three panels for Benefit Packages 1, 2, and 3. Each panel has a 'Name of BP' cell (B21, B50, B79) and a 'Notes' cell (C21, C50, C79). Below each 'Notes' cell is a table with columns for 'Use % or #', '% percentage of age group', and 'Age group'. The 'Age group' column is further divided into 'Females' and 'Males'. The 'Use % or #' column contains a dropdown menu with options: 'G1: Children', 'G2: Formal Sector', 'G3: Disabled', 'G4: Pensioners', 'G5: State Order - Others', and 'G6: Everyone Else'. The '% percentage of age group' column contains a text input field. The 'Age group' column contains a table with uptake percentages for 'Females' and 'Males'.

Note: Screenshot contains hidden rows for illustration purposes only.

Within the row next to the name of the benefit packages are free text cells for inputs to **notes** on uptake assumptions per target group in each period. Specifically, these are **row 21** for Benefit Package 1; **row 50** for Benefit Package 2; and **row 79** for Benefit Package 3 (Figure 201).

Figure 201: Uptake Notes in the 1.6 Uptake and Retention Worksheet

The screenshot displays three panels for Benefit Packages 1, 2, and 3. Each panel has a 'Name of BP' cell (B21, B50, B79) and a 'Notes' cell (C21, C50, C79). Below each 'Notes' cell is a table with columns for 'Use % or #', '% percentage of age group', and 'Age group'. The 'Age group' column is further divided into 'Females' and 'Males'. The 'Use % or #' column contains a dropdown menu with options: 'G1: Children', 'G2: Formal Sector', 'G3: Disabled', 'G4: Pensioners', 'G5: State Order - Others', and 'G6: Everyone Else'. The '% percentage of age group' column contains a text input field. The 'Age group' column contains a table with uptake percentages for 'Females' and 'Males'.

Note: Screenshot contains hidden rows for illustration purposes only.

The uptake can then be defined as either the percentage of the members of the Target Member Group by age bracket, or the number of persons per age group. This is set in the drop-down menu located in **row 23** for “Benefit Package 1;” **row 52** for “Benefit Package 2;” and **row 81** for “Benefit Package 3” (Figure 202).

Figure 202: Setting Up the Uptake Definition in the 1.6 Uptake and Retention Worksheet

The screenshot displays the '1.6 Uptake and Retention Worksheet' with three sections for defining benefit packages (BP1, BP2, BP3). Each section includes a 'Name of BP' field, a 'Notes' field, and a table for defining uptake by age group and sex. The uptake definition is set to '% percentage of age group' for all packages.

Age group	Sex	Uptake Definition	Uptake Value
0 - 1	Females	% percentage of age group	100%
	Males	% percentage of age group	100%

Note: Screenshot above contains hidden rows for illustration purposes only.

Just below the uptake definition setting and for each **target group** and each **period**, the user is required to record the uptake information by **age bracket** and **sex**. Specifically, these input cells for uptake data begin **row 27** for Benefit Package 1; **row 56** for Benefit Package 2; and **row 85** for Benefit Package 3. The user must be careful in inputting data here since there are no built-in automatic checks for these uptake cells (Figure 203).

Figure 203: Input Cells for Uptake Numbers or Percentages in the 1.6 Uptake and Retention Worksheet

The screenshot displays the '1.6 Uptake and Retention Worksheet' with three sections for defining benefit packages (BP1, BP2, BP3). Each section includes a 'Name of BP' field, a 'Notes' field, and a table for defining uptake by age group and sex. The uptake values are set to 100% for all age groups and sexes.

Age group	Sex	Uptake Definition	Uptake Value
0 - 1	Females	% percentage of age group	100%
	Males	% percentage of age group	100%

Note: Screenshot contains hidden rows for illustration purposes only.

Retention

The **retention** portion of the worksheet includes rows 106–195 (Figure 204).

Figure 204: Retention Portion for Each Target Group and Period in the 1.6 Uptake and Retention Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
106	Retention																			
107	Retention is the percentage of members of the Target Population that re-enrolls at the end the specified period of enrolment (i.e. is still there at the beginning of the next period). (Retention thus applies for the next year)																			
110	Define for Benefit Package 1																			
111	Name of BP1:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:	
112	Benefits are the same for																			
116			G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else							
117			In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages	
118	Age group		Females		Males		Females		Males		Females		Males		Females		Males		Females	
119	[0 - 1]		100%		100%		100%		100%		100%		100%		100%		100%		100%	
120	[2 - 7]		100%		100%		100%		100%		100%		100%		100%		100%		100%	
138	Define for Benefit Package 2																			
141	Name of BP2:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:	
142	BP2																			
144			G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else							
145			In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages	
146	Age group		Females		Males		Females		Males		Females		Males		Females		Males		Females	
147	[0 - 1]		100%		100%		100%		100%		100%		100%		100%		100%		100%	
148	[2 - 7]		100%		100%		100%		100%		100%		100%		100%		100%		100%	
166	Define for Benefit Package 3																			
169	Name of BP3:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:		Notes:	
170	BP3																			
172			G1: Children		G2: Formal Sector		G3: Disabled		G4: Pensioners		G5: State Order - Others		G6: Everyone Else							
173			In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages		In percentages	
174	Age group		Females		Males		Females		Males		Females		Males		Females		Males		Females	
175	[- 1]		100%		100%		100%		100%		100%		100%		100%		100%		100%	
176	[2 - 7]		100%		100%		100%		100%		100%		100%		100%		100%		100%	

Note: Screenshot contains hidden rows for illustration purposes only.

Similar to the uptake portion, up to three panels—one for each benefit package listed in the 1.4 Benefit Packages worksheet—are provided for the recording of the “Retention” data. Specifically,

- **Rows 111–138** pertain to the panel for Benefit Package 1 (Figure 205),
- **Rows 139–166** pertain to the panel for Benefit Package 1 (Figure 206), and
- **Rows 167–195** pertain to the panel for Benefit Package 3 (Figure 207).

CHAPTER V

Results of the SLAM File

This chapter describes the 2.0 Generate Results, 3.1 Results,” and Dashboard worksheets that show the results, summary tables, and charts of baseline scenario estimates in the SLAM file.

In this chapter, variables and parameters are denoted in *blue italics*, buttons are described in red underlined, while emphasized information are in black underlined.

A. The 2.0 Generate Results Worksheet

This locked worksheet (Figure 211) provides a Generate Results button that updates the 3.1 Results worksheet.

Figure 211: Preview of the 2.0 Generate Results Worksheet

Clicking the general results button runs for a few minutes before showing the 3.1 Results worksheet with a Generating Results message box (Figure 212). A successful updating will return to the 2.0 Generate Results worksheet and only then can the user move on to the updated 3.1 Results tab reflecting the settings defined in the input worksheets.

Figure 212: Generating Results Message Box from the 2.0 Generate Results Worksheet

B. The 3.1 Results Worksheet

This locked worksheet summarizes the projections on the target population and active members, health expenditures, revenues from premiums, cash flow, financial indicators, and analysis cash flow per member type (Figure 213). Specifically, portions of this worksheet include the following:

- **Rows 1–11** for population projections (Figure 214);
- **Rows 13–18** for health needs (Figure 215);
- **Rows 21–44** for enrollment projections (Figure 216);
- **Rows 46–71** for expenditures projections (Figure 217);
- **Rows 73–110** for revenue projections exclusive of risk loading and/or profit margin (Figure 218);
- **Rows 112–139** for revenue projections inclusive of risk loading and/or profit margin and/or premium increase (Figure 219);

- **Rows 141–164** for cash flow projections (Figure 220);
- **Rows 167–170** for discounted cash flow (Figure 221);
- **Rows 172–195** for expenditures per enrollee (Figure 222);
- **Rows 197–220** for revenues per enrollee (Figure 223);
- **Rows 222–245** for cash flow per enrollee (Figure 224);
- **Rows 247–270** for cash flow as % of revenues (Figure 225); and
- **Rows 272–295** for revenue as % of expenditures (Figure 226).

Figure 213: Preview of the 3.1 Results Worksheet

3.1 Results										
Number of Periods for projections:				Period						
				1	2	3	4	5	6	
				2017	2018	2019	2020	2021	2022	
Target Populations				In Analysis?						
Target Population 1:	G1: Children	Active	1	326,075	320,133	314,144	308,106	300,847	293,587	
Target Population 2:	G2: Formal Sector	Active	1	1,000,786	990,692	980,597	970,503	964,003	957,502	
Target Population 3:	G3: Disabled	Active	1	131,408	130,911	130,415	129,918	128,781	127,644	
Target Population 4:	G4: Pensioners	Active	1	371,696	379,127	386,558	393,989	410,228	426,466	
Target Population 5:	G5: State Order - Others	Active	1	186,432	184,551	182,671	180,790	179,579	178,369	
Target Population 6:	G6: Everyone Else	Active	1	0	0	0	0	0	0	
Health Needs										
Service Categories:				22						
Services:				14,968						
Total number of services projected (may have overlaps):				234,958	238,091	241,224	244,356	248,082	251,808	
Total number of bed days (may have overlaps):				0	0	0	0	0	0	
Benefit Package				In Analysis?						
Benefit Package 1:				Totals / period						
				2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	1,983,568	
				Totals / period	326,075	320,133	314,144	308,106	300,847	293,587
				Totals / period	1,000,786	990,692	980,597	970,503	964,003	957,502
				Totals / period	131,408	130,911	130,415	129,918	128,781	127,644
				Totals / period	371,696	379,127	386,558	393,989	410,228	426,466
				Totals / period	186,432	184,551	182,671	180,790	179,579	178,369
				Totals / period	0	0	0	0	0	0
Benefit Package 2:				Totals / period						
				2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	1,983,568	
				Totals / period	326,075	320,133	314,144	308,106	300,847	293,587
				Totals / period	1,000,786	990,692	980,597	970,503	964,003	957,502
				Totals / period	131,408	130,911	130,415	129,918	128,781	127,644
				Totals / period	371,696	379,127	386,558	393,989	410,228	426,466
				Totals / period	186,432	184,551	182,671	180,790	179,579	178,369
				Totals / period	0	0	0	0	0	0

Figure 214: The Population Projection in the 3.1 Results Worksheet

3.1 Results										
Number of Periods for projections:				Period						
				1	2	3	4	5		
				2017	2018	2019	2020	2021		
Target Populations				In Analysis?						
Target Population 1:	G1: Children	Active	1	326,075	320,133	314,144	308,106	300,847		
Target Population 2:	G2: Formal Sector	Active	1	1,000,786	990,692	980,597	970,503	964,003		
Target Population 3:	G3: Disabled	Active	1	131,408	130,911	130,415	129,918	128,781		
Target Population 4:	G4: Pensioners	Active	1	371,696	379,127	386,558	393,989	410,228		
Target Population 5:	G5: State Order - Others	Active	1	186,432	184,551	182,671	180,790	179,579		
Target Population 6:	G6: Everyone Else	Active	1	0	0	0	0	0		

Figure 215: Health Needs in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
1	3.1 Results									
2						Period				
3		Number of Periods for projections:		15		1	2	3	4	5
4						2017	2018	2019	2020	2021
13	Health Needs									
14	Service Categories:									
15	Services:									
17	Total number of services projected (may have overlaps):					234,958	238,091	241,224	244,356	248,082
18	Total number of bed days (may have overlaps):					0	0	0	0	0

Figure 216: Enrollment Projections in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
21	Benefit Package	Enrolment Projections		In Analysis?						
22	Benefit Package 1:	Benefits are the same for all		Totals / period	2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	
23		G1: Children	1	Totals / period	326,075	320,133	314,144	308,106	300,847	
24		G2: Formal Sector	1	Totals / period	1,000,786	990,692	980,597	970,503	964,003	
25		G3: Disabled	1	Totals / period	131,408	130,911	130,415	129,918	128,781	
26		G4: Pensioners	1	Totals / period	371,696	379,127	386,558	393,989	410,228	
27		G5: State Order - Others	1	Totals / period	186,432	184,551	182,671	180,790	179,579	
28		G6: Everyone Else	1	Totals / period	0	0	0	0	0	
29										
30	Benefit Package 2:	BP2		Totals / period	2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	
31		G1: Children	1	Totals / period	326,075	320,133	314,144	308,106	300,847	
32		G2: Formal Sector	1	Totals / period	1,000,786	990,692	980,597	970,503	964,003	
33		G3: Disabled	1	Totals / period	131,408	130,911	130,415	129,918	128,781	
34		G4: Pensioners	1	Totals / period	371,696	379,127	386,558	393,989	410,228	
35		G5: State Order - Others	1	Totals / period	186,432	184,551	182,671	180,790	179,579	
36		G6: Everyone Else	1	Totals / period	0	0	0	0	0	
37										
38	Benefit Package 3:	BP3		Totals / period	2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	
39		G1: Children	1	Totals / period	326,075	320,133	314,144	308,106	300,847	
40		G2: Formal Sector	1	Totals / period	1,000,786	990,692	980,597	970,503	964,003	
41		G3: Disabled	1	Totals / period	131,408	130,911	130,415	129,918	128,781	
42		G4: Pensioners	1	Totals / period	371,696	379,127	386,558	393,989	410,228	
43		G5: State Order - Others	1	Totals / period	186,432	184,551	182,671	180,790	179,579	
44		G6: Everyone Else	1	Totals / period	0	0	0	0	0	

Figure 217: Expenditures Projections in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
21	Benefit Package	Enrolment Projections	In Analysis?							
22	Benefit Package 1:	Benefits are the same for all		Totals / period	2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	
23		G1: Children	1	Totals / period	326,075	320,133	314,144	308,106	300,847	
24		G2: Formal Sector	1	Totals / period	1,000,786	990,692	980,597	970,503	964,003	
25		G3: Disabled	1	Totals / period	131,408	130,911	130,415	129,918	128,781	
26		G4: Pensioners	1	Totals / period	371,696	379,127	386,558	393,989	410,228	
27		G5: State Order - Others	1	Totals / period	186,432	184,551	182,671	180,790	179,579	
28		G6: Everyone Else	1	Totals / period	0	0	0	0	0	
29										
30	Benefit Package 2:	BP2		Totals / period	2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	
31		G1: Children	1	Totals / period	326,075	320,133	314,144	308,106	300,847	
32		G2: Formal Sector	1	Totals / period	1,000,786	990,692	980,597	970,503	964,003	
33		G3: Disabled	1	Totals / period	131,408	130,911	130,415	129,918	128,781	
34		G4: Pensioners	1	Totals / period	371,696	379,127	386,558	393,989	410,228	
35		G5: State Order - Others	1	Totals / period	186,432	184,551	182,671	180,790	179,579	
36		G6: Everyone Else	1	Totals / period	0	0	0	0	0	
37										
38	Benefit Package 3:	BP3		Totals / period	2,016,397	2,005,415	1,994,385	1,983,306	1,983,438	
39		G1: Children	1	Totals / period	326,075	320,133	314,144	308,106	300,847	
40		G2: Formal Sector	1	Totals / period	1,000,786	990,692	980,597	970,503	964,003	
41		G3: Disabled	1	Totals / period	131,408	130,911	130,415	129,918	128,781	
42		G4: Pensioners	1	Totals / period	371,696	379,127	386,558	393,989	410,228	
43		G5: State Order - Others	1	Totals / period	186,432	184,551	182,671	180,790	179,579	
44		G6: Everyone Else	1	Totals / period	0	0	0	0	0	

Figure 218: Revenue Projections Exclusive of Risk Loading and/or Profit Margin in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
75	Benefit Package	Revenue Projections	In Analysis?			EXCLUSIVE OF RISK LOADING AND / OR PROFIT MARGIN								
76	Benefit Package 1:	Benefits are the same for all		AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983	8,153,989	8,283,999	8,250,878	8.25
77		G1: Children	1	AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983	8,153,989	8,283,999	8,250,878	8.25
78		G2: Formal Sector	1	AMD		0	0	0	0	0	0	0	0	0
79		G3: Disabled	1	AMD		0	0	0	0	0	0	0	0	0
80		G4: Pensioners	1	AMD		0	0	0	0	0	0	0	0	0
81		G5: State Order - Others	1	AMD		0	0	0	0	0	0	0	0	0
82		G6: Everyone Else	1	AMD		0	0	0	0	0	0	0	0	0
83	Benefit Package 2:	BP2		AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983	8,153,989	8,283,999	8,250,878	8.25
84		G1: Children	1	AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983	8,153,989	8,283,999	8,250,878	8.25
85		G2: Formal Sector	1	AMD		0	0	0	0	0	0	0	0	0
86		G3: Disabled	1	AMD		0	0	0	0	0	0	0	0	0
87		G4: Pensioners	1	AMD		0	0	0	0	0	0	0	0	0
88		G5: State Order - Others	1	AMD		0	0	0	0	0	0	0	0	0
89		G6: Everyone Else	1	AMD		0	0	0	0	0	0	0	0	0
90	Benefit Package 3:	BP3		AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983	8,153,989	8,283,999	8,250,878	8.25
91		G1: Children	1	AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983	8,153,989	8,283,999	8,250,878	8.25
92		G2: Formal Sector	1	AMD		0	0	0	0	0	0	0	0	0
93		G3: Disabled	1	AMD		0	0	0	0	0	0	0	0	0
94		G4: Pensioners	1	AMD		0	0	0	0	0	0	0	0	0
95		G5: State Order - Others	1	AMD		0	0	0	0	0	0	0	0	0
96		G6: Everyone Else	1	AMD		0	0	0	0	0	0	0	0	0
97	Cash flow				BP1	(48,190,679,232)	(49,695,626,321)	(51,046,256,528)	(52,881,446,332)	(55,035,463,696)	(57,352,363,277)	(59,803,523,839)	(62,376,698,533)	(65,056,010,000)
98					BP2	(48,190,679,232)	(49,695,626,321)	(51,046,256,528)	(52,881,446,332)	(55,035,463,696)	(57,352,363,277)	(59,803,523,839)	(62,376,698,533)	(65,056,010,000)
99					BP3	(48,190,679,232)	(49,695,626,321)	(51,046,256,528)	(52,881,446,332)	(55,035,463,696)	(57,352,363,277)	(59,803,523,839)	(62,376,698,533)	(65,056,010,000)
100														
101	Risk loading	8.00%	Per month			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
102	Admin	8.00%	Per month			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
103	Profit Margin, not applied to Positive Cashflow	8.00%	Positive Cashflow			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
104	Premium increase	8.00%	First period only	100.00%		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
105	Total Premium, excluding Profit on Positive Cashflow					100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
106	Profit Margin, applied to Positive Cashflow				BP1	0	0	0	0	0	0	0	0	0
107					BP2	0	0	0	0	0	0	0	0	0
108					BP3	0	0	0	0	0	0	0	0	0

Figure 219: Revenue Projections Inclusive of Risk Loading and/or Profit Margin and/or Premium Increase in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
112	Benefit Package	Revenue Projections	In Analysis?			INCLUSIVE OF RISK LOADING AND / OR PROFIT MARGIN AND / OR PREMIUM INCREASE				
113	Benefit Package 1:	Benefits are the same for all		AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983
114		G1: Children	1	AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983
115		G2: Formal Sector	1	AMD		0	0	0	0	0
116		G3: Disabled	1	AMD		0	0	0	0	0
117		G4: Pensioners	1	AMD		0	0	0	0	0
118		G5: State Order - Others	1	AMD		0	0	0	0	0
119		G6: Everyone Else	1	AMD		0	0	0	0	0
120										
121	Benefit Package 2:	BP2		AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983
122		G1: Children	1	AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983
123		G2: Formal Sector	1	AMD		0	0	0	0	0
124		G3: Disabled	1	AMD		0	0	0	0	0
125		G4: Pensioners	1	AMD		0	0	0	0	0
126		G5: State Order - Others	1	AMD		0	0	0	0	0
127		G6: Everyone Else	1	AMD		0	0	0	0	0
128										
129	Benefit Package 3:	BP3		AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983
130		G1: Children	1	AMD		8,173,157	8,140,379	8,069,223	8,059,926	8,103,983
131		G2: Formal Sector	1	AMD		0	0	0	0	0
132		G3: Disabled	1	AMD		0	0	0	0	0
133		G4: Pensioners	1	AMD		0	0	0	0	0
134		G5: State Order - Others	1	AMD		0	0	0	0	0
135		G6: Everyone Else	1	AMD		0	0	0	0	0
136										
137	Risk+Profit+Premium	Benefit Package 1:				0	0	0	0	0
138		Benefit Package 2:				0	0	0	0	0
139		Benefit Package 3:				0	0	0	0	0

Figure 220: Cash Flow Projections in the 3.1 Results Worksheet

A	B	C	D	E	F	G	H	I	J
Benefit Package	Cash Flow Projections	In Analysis?							
Benefit Package 1:	Benefits are the same for all		AMD		(48,190,679,232)	(49,695,626,321)	(51,046,256,528)	(52,881,446,332)	(55,035,463,696)
	G1: Children	1	AMD		(7,836,655,191)	(7,815,360,322)	(7,757,563,268)	(7,759,641,864)	(7,804,877,436)
	G2: Formal Sector	1	AMD		(23,512,569,074)	(23,926,645,568)	(24,251,899,485)	(24,791,025,746)	(25,364,994,888)
	G3: Disabled	1	AMD		(2,815,819,682)	(2,873,613,935)	(2,921,119,363)	(2,994,817,430)	(3,056,163,464)
	G4: Pensioners	1	AMD		(11,995,643,792)	(13,020,360,782)	(14,034,301,921)	(15,214,827,706)	(16,637,120,130)
	G5: State Order - Others	1	AMD		(2,029,991,492)	(2,059,645,716)	(2,081,372,492)	(2,121,133,586)	(2,172,307,778)
	G6: Everyone Else	1	AMD		0	0	0	0	0
Benefit Package 2:	BP2		AMD		(48,190,679,232)	(49,695,626,321)	(51,046,256,528)	(52,881,446,332)	(55,035,463,696)
	G1: Children	1	AMD		(7,836,655,191)	(7,815,360,322)	(7,757,563,268)	(7,759,641,864)	(7,804,877,436)
	G2: Formal Sector	1	AMD		(23,512,569,074)	(23,926,645,568)	(24,251,899,485)	(24,791,025,746)	(25,364,994,888)
	G3: Disabled	1	AMD		(2,815,819,682)	(2,873,613,935)	(2,921,119,363)	(2,994,817,430)	(3,056,163,464)
	G4: Pensioners	1	AMD		(11,995,643,792)	(13,020,360,782)	(14,034,301,921)	(15,214,827,706)	(16,637,120,130)
	G5: State Order - Others	1	AMD		(2,029,991,492)	(2,059,645,716)	(2,081,372,492)	(2,121,133,586)	(2,172,307,778)
	G6: Everyone Else	1	AMD		0	0	0	0	0
Benefit Package 3:	BP3		AMD		(48,190,679,232)	(49,695,626,321)	(51,046,256,528)	(52,881,446,332)	(55,035,463,696)
	G1: Children	1	AMD		(7,836,655,191)	(7,815,360,322)	(7,757,563,268)	(7,759,641,864)	(7,804,877,436)
	G2: Formal Sector	1	AMD		(23,512,569,074)	(23,926,645,568)	(24,251,899,485)	(24,791,025,746)	(25,364,994,888)
	G3: Disabled	1	AMD		(2,815,819,682)	(2,873,613,935)	(2,921,119,363)	(2,994,817,430)	(3,056,163,464)
	G4: Pensioners	1	AMD		(11,995,643,792)	(13,020,360,782)	(14,034,301,921)	(15,214,827,706)	(16,637,120,130)
	G5: State Order - Others	1	AMD		(2,029,991,492)	(2,059,645,716)	(2,081,372,492)	(2,121,133,586)	(2,172,307,778)
	G6: Everyone Else	1	AMD		0	0	0	0	0

Figure 221: The Discounted Cash Flow in the 3.1 Results Worksheet

A	B	C	D	E	F	G	H	I	J
Benefit Package	Discounted Cash Flow	2%	15.00						
Benefit Package 1:	Benefits are the same for all		(797,269,402,416)	AMD	(47,245,763,953)	(47,765,884,584)	(48,102,027,622)	(48,854,282,315)	(49,847,315,103)
Benefit Package 2:	BP2		(797,269,402,416)	AMD	(47,245,763,953)	(47,765,884,584)	(48,102,027,622)	(48,854,282,315)	(49,847,315,103)
Benefit Package 3:	BP3		(797,269,402,416)	AMD	(47,245,763,953)	(47,765,884,584)	(48,102,027,622)	(48,854,282,315)	(49,847,315,103)

Figure 222: Expenditures per Enrollee in the 3.1 Results Worksheet

A	B	C	D	E	F	G	H	I	J
Benefit Package	Expenditures per Enrollee	In Analysis?							
Benefit Package 1:	Benefits are the same for all		AMD		23,903	24,785	25,599	26,667	27,752
	G1: Children	1	AMD		24,058	24,438	24,720	25,211	25,970
	G2: Formal Sector	1	AMD		23,494	24,151	24,732	25,545	26,312
	G3: Disabled	1	AMD		21,428	21,951	22,399	23,052	23,731
	G4: Pensioners	1	AMD		32,273	34,343	36,306	38,617	40,556
	G5: State Order - Others	1	AMD		10,889	11,160	11,394	11,733	12,097
	G6: Everyone Else	1	AMD		0	0	0	0	0
Benefit Package 2:	BP2		AMD		23,903	24,785	25,599	26,667	27,752
	G1: Children	1	AMD		24,058	24,438	24,720	25,211	25,970
	G2: Formal Sector	1	AMD		23,494	24,151	24,732	25,545	26,312
	G3: Disabled	1	AMD		21,428	21,951	22,399	23,052	23,731
	G4: Pensioners	1	AMD		32,273	34,343	36,306	38,617	40,556
	G5: State Order - Others	1	AMD		10,889	11,160	11,394	11,733	12,097
	G6: Everyone Else	1	AMD		0	0	0	0	0
Benefit Package 3:	BP3		AMD		23,903	24,785	25,599	26,667	27,752
	G1: Children	1	AMD		24,058	24,438	24,720	25,211	25,970
	G2: Formal Sector	1	AMD		23,494	24,151	24,732	25,545	26,312
	G3: Disabled	1	AMD		21,428	21,951	22,399	23,052	23,731
	G4: Pensioners	1	AMD		32,273	34,343	36,306	38,617	40,556
	G5: State Order - Others	1	AMD		10,889	11,160	11,394	11,733	12,097
	G6: Everyone Else	1	AMD		0	0	0	0	0

Figure 223: Revenues per Enrollee in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
197	Benefit Package	Revenues per Enrollee	In Analysis?							
198	Benefit Package 1:	Benefits are the same for all		AMD	4	4	4	4	4	4
199		G1: Children	1	AMD	25	25	26	26	27	27
200		G2: Formal Sector	1	AMD	0	0	0	0	0	0
201		G3: Disabled	1	AMD	0	0	0	0	0	0
202		G4: Pensioners	1	AMD	0	0	0	0	0	0
203		G5: State Order - Others	1	AMD	0	0	0	0	0	0
204		G6: Everyone Else	1	AMD	0	0	0	0	0	0
205										
206	Benefit Package 2:	BP2		AMD	4	4	4	4	4	4
207		G1: Children	1	AMD	25	25	26	26	27	27
208		G2: Formal Sector	1	AMD	0	0	0	0	0	0
209		G3: Disabled	1	AMD	0	0	0	0	0	0
210		G4: Pensioners	1	AMD	0	0	0	0	0	0
211		G5: State Order - Others	1	AMD	0	0	0	0	0	0
212		G6: Everyone Else	1	AMD	0	0	0	0	0	0
213										
214	Benefit Package 3:	BP3		AMD	4	4	4	4	4	4
215		G1: Children	1	AMD	25	25	26	26	27	27
216		G2: Formal Sector	1	AMD	0	0	0	0	0	0
217		G3: Disabled	1	AMD	0	0	0	0	0	0
218		G4: Pensioners	1	AMD	0	0	0	0	0	0
219		G5: State Order - Others	1	AMD	0	0	0	0	0	0
220		G6: Everyone Else	1	AMD	0	0	0	0	0	0

Figure 224: Cash Flow per Enrollee in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
222	Benefit Package	Cash Flow per Enrollee	In Analysis?							
223	Benefit Package 1:	Benefits are the same for all		AMD	(23,899)	(24,781)	(25,595)	(26,663)	(27,748)	
224		G1: Children	1	AMD	(24,033)	(24,413)	(24,694)	(25,185)	(25,943)	
225		G2: Formal Sector	1	AMD	(23,494)	(24,151)	(24,732)	(25,545)	(26,312)	
226		G3: Disabled	1	AMD	(21,428)	(21,951)	(22,399)	(23,052)	(23,731)	
227		G4: Pensioners	1	AMD	(32,273)	(34,343)	(36,306)	(38,617)	(40,556)	
228		G5: State Order - Others	1	AMD	(10,889)	(11,160)	(11,394)	(11,733)	(12,097)	
229		G6: Everyone Else	1	AMD	0	0	0	0	0	
230										
231	Benefit Package 2:	BP2		AMD	(23,899)	(24,781)	(25,595)	(26,663)	(27,748)	
232		G1: Children	1	AMD	(24,033)	(24,413)	(24,694)	(25,185)	(25,943)	
233		G2: Formal Sector	1	AMD	(23,494)	(24,151)	(24,732)	(25,545)	(26,312)	
234		G3: Disabled	1	AMD	(21,428)	(21,951)	(22,399)	(23,052)	(23,731)	
235		G4: Pensioners	1	AMD	(32,273)	(34,343)	(36,306)	(38,617)	(40,556)	
236		G5: State Order - Others	1	AMD	(10,889)	(11,160)	(11,394)	(11,733)	(12,097)	
237		G6: Everyone Else	1	AMD	0	0	0	0	0	
238										
239	Benefit Package 3:	BP3		AMD	(23,899)	(24,781)	(25,595)	(26,663)	(27,748)	
240		G1: Children	1	AMD	(24,033)	(24,413)	(24,694)	(25,185)	(25,943)	
241		G2: Formal Sector	1	AMD	(23,494)	(24,151)	(24,732)	(25,545)	(26,312)	
242		G3: Disabled	1	AMD	(21,428)	(21,951)	(22,399)	(23,052)	(23,731)	
243		G4: Pensioners	1	AMD	(32,273)	(34,343)	(36,306)	(38,617)	(40,556)	
244		G5: State Order - Others	1	AMD	(10,889)	(11,160)	(11,394)	(11,733)	(12,097)	
245		G6: Everyone Else	1	AMD	0	0	0	0	0	

Figure 225: Cash Flow as % of Revenues in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
247	Benefit Package	Cash Flow as % of Revenues	In Analysis?							
248	Benefit Package 1:	Benefits are the same for all		ratio		(5,896.21)	(6,104.83)	(6,326.04)	(6,561.03)	(6,791.16)
249		G1: Children	1	ratio		(958.83)	(960.07)	(961.38)	(962.74)	(963.09)
250		G2: Formal Sector	1	ratio		0.00	0.00	0.00	0.00	0.00
251		G3: Disabled	1	ratio		0.00	0.00	0.00	0.00	0.00
252		G4: Pensioners	1	ratio		0.00	0.00	0.00	0.00	0.00
253		G5: State Order - Others	1	ratio		0.00	0.00	0.00	0.00	0.00
254		G6: Everyone Else	1	ratio		0.00	0.00	0.00	0.00	0.00
255										
256	Benefit Package 2:	BP2		ratio		(5,896.21)	(6,104.83)	(6,326.04)	(6,561.03)	(6,791.16)
257		G1: Children	1	ratio		(958.83)	(960.07)	(961.38)	(962.74)	(963.09)
258		G2: Formal Sector	1	ratio		0.00	0.00	0.00	0.00	0.00
259		G3: Disabled	1	ratio		0.00	0.00	0.00	0.00	0.00
260		G4: Pensioners	1	ratio		0.00	0.00	0.00	0.00	0.00
261		G5: State Order - Others	1	ratio		0.00	0.00	0.00	0.00	0.00
262		G6: Everyone Else	1	ratio		0.00	0.00	0.00	0.00	0.00
263										
264	Benefit Package 3:	BP3		ratio		(5,896.21)	(6,104.83)	(6,326.04)	(6,561.03)	(6,791.16)
265		G1: Children	1	ratio		(958.83)	(960.07)	(961.38)	(962.74)	(963.09)
266		G2: Formal Sector	1	ratio		0.00	0.00	0.00	0.00	0.00
267		G3: Disabled	1	ratio		0.00	0.00	0.00	0.00	0.00
268		G4: Pensioners	1	ratio		0.00	0.00	0.00	0.00	0.00
269		G5: State Order - Others	1	ratio		0.00	0.00	0.00	0.00	0.00
270		G6: Everyone Else	1	ratio		0.00	0.00	0.00	0.00	0.00

Figure 226: Revenues as % of Expenditures in the 3.1 Results Worksheet

	A	B	C	D	E	F	G	H	I	J
272	Benefit Package	Revenue as % of Expenditures	In Analysis?							
273	Benefit Package 1:	Benefits are the same for all		ratio		0.00	0.00	0.00	0.00	0.00
274		G1: Children	1	ratio		0.00	0.00	0.00	0.00	0.00
275		G2: Formal Sector	1	ratio		0.00	0.00	0.00	0.00	0.00
276		G3: Disabled	1	ratio		0.00	0.00	0.00	0.00	0.00
277		G4: Pensioners	1	ratio		0.00	0.00	0.00	0.00	0.00
278		G5: State Order - Others	1	ratio		0.00	0.00	0.00	0.00	0.00
279		G6: Everyone Else	1	ratio		0.00	0.00	0.00	0.00	0.00
280										
281	Benefit Package 2:	BP2		ratio		0.00	0.00	0.00	0.00	0.00
282		G1: Children	1	ratio		0.00	0.00	0.00	0.00	0.00
283		G2: Formal Sector	1	ratio		0.00	0.00	0.00	0.00	0.00
284		G3: Disabled	1	ratio		0.00	0.00	0.00	0.00	0.00
285		G4: Pensioners	1	ratio		0.00	0.00	0.00	0.00	0.00
286		G5: State Order - Others	1	ratio		0.00	0.00	0.00	0.00	0.00
287		G6: Everyone Else	1	ratio		0.00	0.00	0.00	0.00	0.00
288										
289	Benefit Package 3:	BP3		ratio		0.00	0.00	0.00	0.00	0.00
290		G1: Children	1	ratio		0.00	0.00	0.00	0.00	0.00
291		G2: Formal Sector	1	ratio		0.00	0.00	0.00	0.00	0.00
292		G3: Disabled	1	ratio		0.00	0.00	0.00	0.00	0.00
293		G4: Pensioners	1	ratio		0.00	0.00	0.00	0.00	0.00
294		G5: State Order - Others	1	ratio		0.00	0.00	0.00	0.00	0.00
295		G6: Everyone Else	1	ratio		0.00	0.00	0.00	0.00	0.00

However, the user is advised to use the Dashboard worksheet to view the formatted table results with accompanying graphs for analysis. See next section for description of the Dashboard worksheet, followed by a discussion of viewing results using the Dashboard.

C. The Dashboard Worksheet

This worksheet shows the formatted results of the SLAM analysis (Figure 227). By design, it is used as quick overview for managers to see the output of the actuarial modeling. Users may also modify the target groups to be included in the analysis by using the “Include in analysis?” option in the drop-down menus.

Figure 227: Preview of the Dashboard Worksheet

FOR YOUR INFORMATION

Input cells found in this worksheet include:

Input Cells

100.00

Input cell, restricted input (e.g., only positive values/only integers/dates/etc.)

100.00

Input cell, select option from list

Restrictions in input cells in this worksheet include encoding only positive numeric values or selection from a drop-down list.

The SLAM Dashboard has four partitions: (i) sensitivity parameters, (ii) target population projections, (iii) expenditures and revenue projections, and (iv) ratios, as detailed below.

Sensitivity Parameters

In this partition, users can input specifications to be reflected in the dashboard (Figure 228). This information is in addition to the set assumptions discussed in Chapter II-D. The parameters include **population growth** of each period (**cell D4**) for an identified subpopulation (**cell H4**); **inflation for expenditures** (**cell D5**) and **inflation for revenues** (**cell D6**) for the first period only or for each period (**cells H5 and H6**); and the **premium increase** (**cell D7**) added to the risk loading, admin and profit margin, for the first period only or for each period (**cell H7**).

Figure 228: The Sensitivity Parameters Partition in the Dashboard Worksheet

	A	B	C	D	E	F	G	H
1	Dashboard							
2								
3	Sensitivity Parameters							
4	Population growth (additional to assumptions, applies each period)			0%	Applies to		G1: Children	
5	Inflation, expenditures (additional to assumptions)			0%	Applies to		Each period	
6	Inflation, revenues (additional to assumptions)			0%	Applies to		Each period	
7	Premium increase (added to the Risk loading, Admin and Profit Margin)			0%	Applies to		First period only	

Sensitivity analysis will be discussed in detail in Chapter VI.

Target Population Projections

In this partition, users set whether a target group of population will be included in the analysis shown in the dashboard (**cells B14–B19**) (Figure 229). It also shows data table and consequent chart on **target group size** by end of the first period and end of the last period per **target group** (Figure 230), as well as **active members under each benefit package** by end of the first period and end of the last period per **target group** (Figure 231).

Figure 229: Preview of the Target Population Projections Partition in the Dashboard Worksheet

Figure 230: Target Group Size Table and Chart in the Target Population Projections Partition

Figure 231: Active Members Table and Chart in the Target Population Projections Partition

Expenditures and Revenues Projection

In this partition (Figure 232), the basis of expenditures can be defined as total cost, outpatient costs, or inpatient costs in the drop-down menu of **cell B46** (Figure 233).

Figure 232: Preview of Expenditures and Revenues Projections Partition in the Dashboard Worksheet

Expenditures and Revenues Projections									
Expenditures based on:		Total Cost							
Benefit Package		Included in analysis?	Estimated Expenditures - Total Cost		Benefit Package		Included in analysis?	Estimated Revenues	
			2017	2031				2017	2031
			AMD					AMD	
Benefits are the same for all			36,203,208,536	50,309,361,225	Benefits are the same for all			182,392	
G1: Children	Yes		7,844,828,348	8,583,888,539	G1: Children	Yes		0	
G2: Formal Sector	Yes		23,512,569,074	34,700,450,747	G2: Formal Sector	Yes		0	
G3: Disabled	Yes		2,895,819,682	4,073,440,688	G3: Disabled	Yes		0	
G4: Pensioners	Yes		0	0	G4: Pensioners	Yes		0	
G5: State Order - Others	Yes		2,029,991,432	2,945,581,251	G5: State Order - Others	Yes		182,392	
G6: Everyone Else	Yes		0	0	G6: Everyone Else	Yes		0	
BP2			36,203,208,536	50,309,361,225	BP2			182,392	
G1: Children	Yes		7,844,828,348	8,583,888,539	G1: Children	Yes		0	
G2: Formal Sector	Yes		23,512,569,074	34,700,450,747	G2: Formal Sector	Yes		0	
G3: Disabled	Yes		2,895,819,682	4,073,440,688	G3: Disabled	Yes		0	
G4: Pensioners	Yes		0	0	G4: Pensioners	Yes		0	
G5: State Order - Others	Yes		2,029,991,432	2,945,581,251	G5: State Order - Others	Yes		182,392	
G6: Everyone Else	Yes		0	0	G6: Everyone Else	Yes		0	
BP3			36,203,208,536	50,309,361,225	BP3			182,392	
G1: Children	Yes		7,844,828,348	8,583,888,539	G1: Children	Yes		0	
G2: Formal Sector	Yes		23,512,569,074	34,700,450,747	G2: Formal Sector	Yes		0	
G3: Disabled	Yes		2,895,819,682	4,073,440,688	G3: Disabled	Yes		0	
G4: Pensioners	Yes		0	0	G4: Pensioners	Yes		0	
G5: State Order - Others	Yes		2,029,991,432	2,945,581,251	G5: State Order - Others	Yes		182,392	
G6: Everyone Else	Yes		0	0	G6: Everyone Else	Yes		0	
Target groups may overlap			108,609,625,788	150,928,083,676	Target groups may overlap			547,175	
Estimated Expenditures - Total Cost					Estimated Revenues				

Note: AMD = Armenian dram.

Figure 233: Input Cell for Basis of Expenditures in the Expenditures and Revenues Projections Partition

Expenditures and Revenues Projections			
Expenditures based on:		Total Cost	
		Total Cost	
		Outpatient Costs	
		Inpatient Costs	
Benefit Package		Included in analysis?	Estimated Expenditures - Total Cost
		2017	2031

This portion of the Dashboard shows data table and chart specified at the end of the first period and last period by *benefit package* and *target groups* for *estimated expenditures* (Figure 234), *estimated revenues* (Figure 235), *cash flow* (Figure 236), *expenditures per enrollee* (Figure 237), *revenues per enrollee* (Figure 238), and *cash flow per enrollee* (Figure 239).

Figure 234: Estimated Expenditures Table and Chart in the Expenditures and Revenues Projections Partition

Note: AMD = Armenian dram.

Figure 235: Estimated Revenues Table and Chart in the Expenditures and Revenues Projections Partition

Note: AMD = Armenian dram.

Figure 236: Cash Flow Table and Chart in the Expenditures and Revenues Projections Partition

Note: AMD = Armenian dram.

Figure 237: Expenditures per Enrollee–Total Cost Table and Chart in the Expenditures and Revenues Projections Partition

Note: AMD = Armenian dram.

Figure 238: Revenues per Enrollee Table and Chart in the Expenditures and Revenues Projections Partition

Note: AMD = Armenian dram.

Figure 239: Cash Flow per Enrollee Table and Chart in the Expenditures and Revenues Projections Partition

Note: AMD = Armenian dram.

Figure 241: Revenues as Percentage of Expenditures Table and Chart in the Ratios Partition

Note: AMD = Armenian dram.

Figure 242: Cash Flow as Percentage of Revenues Table and Chart in the Ratios Partition

Note: AMD = Armenian dram.

D. Results of Baseline Scenario Viewed Using the Dashboard Worksheet

The default settings in the sample SLAM Excel file shows the following results in the “Dashboard” worksheet.

Projections of the Target Populations and Active Members

Because the same growth percentages are applied to various member types, the larger groups will grow faster.

The target population is the population from which the health insurance program draws its members (Figure 243). If the uptake and the retention were both 100%, then the total of active members of the various member types would equal the target populations. However, while the uptake is assumed to be 100% of the target group growth, the retention rate is less than the desired retention rate of 100% per annum; hence the number of active members is lower (Figure 244).

Figure 243: Projections of Target Populations in the Dashboard Worksheet

Figure 244: Projections of Active Members in the Dashboard Worksheet

Projections of the Health Expenditures

The projected health services under the baseline scenario show that expenditures are growing (Figure 245). A review of the assumptions set will show that two factors led to this growth: increased numbers of active members and increasing expenditures per enrollee.

Figure 245: Projections of Health Expenditures in the Dashboard Worksheet

Note: AMD = Armenian dram.

Projections of Revenues from Premiums

The estimated revenues from premiums, assuming benefits are the same for all, are 182,392 in 2017 and 247,286 in 2031 (Figure 246). In case there are hikes in the provided line graph in future studies, these increases could correspond to any premium adjustments made in the scenario analysis. Since there are no defined B2 and B3 differences with the first benefit package in the sample Excel file in used in this manual, the estimated revenues for B2 and B3 are the same as B1 (benefits are the same for all members).

Figure 246: Projections of Revenues from Premiums in the Dashboard Worksheet

Note: AMD = Armenian dram.

Projection of Cash Flows

The figures here show the projections under the Baseline Scenario assumptions of the cash flows (Figures 247 and 248), cash per Active Member (Figure 249), and ratio of the cost over revenues together with the number of Active Members (Figure 250).

Figure 247: Projections of Cash Flow in the Dashboard Worksheet

Note: AMD = Armenian dram.

Figure 248: Projections of Cash Flow per Active Member in the Dashboard Worksheet

Note: AMD = Armenian dram.

Figure 249: Projections of Cash per Active Member in the Dashboard Worksheet

Note: AMD = Armenian dram.

Figure 250: Ratio of the Cost Over Revenues Together with the Number of Active Members in the Dashboard Worksheet

Note: AMD = Armenian dram.

Based on the assumptions set for the baseline scenario, the graphs show the worsening cash flow both in absolute terms as well as per Active Member.

As the incidences of health services provided to the members do not change over time under the baseline scenario (see *Assumption 20*), the worsening of the cash flow is due to two factors. First, the growth in the number of members causes increasingly negative cash flow. Second, while the inflation rates for expenditures and for revenues are equal on a percentage annual basis, the fact that the expenditures per active member started higher compared to the revenues per active member means that the difference per enrollee increases over time.

Analysts are also allowed to determine the discounted cash flows set at the discount rate inputted in the 1.0 General Assumptions worksheet.

Projection of Financial Indicators

Revenue as a percentage of expenditures is a good indicator of how well the premium is set and how well the insurance is performing (Figure 251).

Figure 251: Projection of Financial Indicator: Revenue as a Percentage of Expenditures in the Dashboard Worksheet

Note: AMD = Armenian dram.

Another financial indicator is cash flow as a percentage of revenues from premiums (Figure 252). This ratio is also quite stable, except for the different periodic adjustments in the inflation between expenditures and premiums.

Forecasting projected cash flow by various member types allows determination of which member group type(s) are the major contributors to the positive or negative cash flow of the health insurance program.

In case there are hikes in the provided line graph in future studies, these increases could correspond to any expenditures and premium adjustments made in the scenario analysis.

Figure 252: Projection of Financial Indicator: Cash Flow as a Percentage of Revenues from Premiums in the Dashboard Worksheet

Note: AMD = Armenian dram.

CHAPTER VI

Sensitivity Analysis

The SLAM Excel file allows users to perform sensitivity and scenario analyses using several input parameters, as defined in the baseline scenario. In a sensitivity analysis, a quantitative model input parameter is changed to assess its impact in the model results and its robustness. Sensitive parameters are those whose changes have a large impact on the result. A robust model, meanwhile, is a model where (relatively small) changes in model input parameters have little effect on the result. In a scenario analysis, multiple assumptions can be changed at once (in relation to the baseline scenario) to assess what happens in such a scenario.

Analysts may perform sensitivity analysis using **rows 3–7** of the “Dashboard” worksheet (Figure 253). Specifically, input cells in **column D** allow users to revise the parameters set in the 1.0 General Assumptions worksheet. The user must be careful when setting the parameters and remember that these are on top of the baseline scenario assumptions. **Column H**, meanwhile, allows users to define which group or period the revised parameters will be applied to.

Figure 253: Input cells for Sensitivity and Scenario Analyses in the Dashboard Worksheet

	A	B	C	D	E	F	G	H
1	Dashboard							
2								
3	Sensitivity Parameters							
4	Population growth (additional to assumptions, applies each period)			0%	Applies to	G1: Children		
5	Inflation, expenditures (additional to assumptions)			0%	Applies to	Each period		
6	Inflation, revenues (additional to assumptions)			0%	Applies to	Each period		
7	Premium increase (added to the Risk loading, Admin and Profit Margin)			0%	Applies to	First period only		

A. Changes in Enrollment Numbers

Cell D4 allows analysts to revise the growth percentages of the Target Group/s. Changes in the growth rates will allow analysts to determine whether increases or reduction in specific Target Groups identified in **cell H4** will yield better cash flow for the health insurance program (Figure 254).

Figure 254: Input Cells for Changes in Enrollment Numbers in the Dashboard Worksheet

	A	B	C	D	E	F	G	H
1	Dashboard							
2								
3	Sensitivity Parameters							
4	Population growth (additional to assumptions, applies each period)			0%	Applies to	G1: Children		
5	Inflation, expenditures (additional to assumptions)			0%	Applies to	Each period		
6	Inflation, revenues (additional to assumptions)			0%	Applies to	Each period		
7	Premium increase (added to the Risk loading, Admin and Profit Margin)			0%	Applies to	First period only		

B. Changes in Expenditures Inflation

As shown in Figure 255, **cell D5** provides the analyst space to input additional assumptions on the health expenditures (e.g., members accessing more expensive health services or getting more expensive treatments). **Cell H5**, on the other hand, allows analysts to consider a single increase of expenditures (“first period only”) or periodical increases (“each period”).

Figure 255: Input Cells for Changes in Expenditures Inflation in the Dashboard Worksheet

	A	B	C	D	E	F	G	H
1	Dashboard							
2								
3	Sensitivity Parameters							
4	Population growth (additional to assumptions, applies each period)			0%	Applies to	G1: Children		
5	Inflation, expenditures (additional to assumptions)			0%	Applies to	Each period		
6	Inflation, revenues (additional to assumptions)			0%	Applies to	Each period		
7	Premium increase (added to the Risk loading, Admin and Profit Margin)			0%	Applies to	First period only		

Changes in inflation will allow analysts to determine whether positive cash flow will be realized when health expenditures are reduced.

C. Changes in Revenues Inflation

As shown in Figure 256, **cell D6** provides the analyst space to input additional assumptions on premium increase, while **cell H6** allows analysts to consider a single increase of premium (“first period only”) or periodical increases (“each period”) to compute when the health insurance program will reach a positive cash flow in case negative estimates were derived in the baseline scenario.

Figure 256: Input Cells for Changes in Revenues Inflation in the Dashboard Worksheet

	A	B	C	D	E	F	G	H
1	Dashboard							
2								
3	Sensitivity Parameters							
4	Population growth (additional to assumptions, applies each period)			0%	Applies to	G1: Children		
5	Inflation, expenditures (additional to assumptions)			0%	Applies to	Each period		
6	Inflation, revenues (additional to assumptions)			0%	Applies to	Each period		
7	Premium increase (added to the Risk loading, Admin and Profit Margin)			0%	Applies to	First period only		

CHAPTER VII

Summary of Use and Potential

To reach positive cash flow, a review of the benefit package is often preferred over a review of the premiums. The SLAM allows managers of health insurance schemes to perform actuarial analysis and projections of current program operations. The objective is to help analysts compare various programs using different financial indicators. The actuarial model permits using the present policy and make projections toward the future to assess the financial sustainability of the health insurance operations. The SLAM will aid program managers to determine whether there could be significant cash flow problems that may grow simultaneously with the projected growth of the health insurance program.

Actuarial projections could show that in some cases, continuing businesses-as-usual is not an option for the sustainability of the health insurance scheme. Thus, expenditures must be examined, increases in premium rates should be considered, and membership expansion should be assessed.

It must be noted that while SLAM can assist in the day-to-day management of health insurance programs, health insurance and actuarial experts are still needed for in-depth assessments and reviews of these insurance schemes. The SLAM will be a useful tool to considerably speed up the review process of the program and increase transparency among analysts.

Appendix

Defining the General Security Settings in Microsoft Excel

The following steps can check the general settings in Microsoft Excel:

Step 1: Select the [File](#) menu (Figure A1) in the upper left corner of the Excel file.

Figure A1: The File Menu in Microsoft Excel

Step 2: In the file menu, select the [Options](#) button, which gives access to the Excel Options window (Figure A2).

Figure A2: Options Button in the Microsoft Excel File Menu

Step 3: In the Excel Options window (Figure A3), (i) choose [Trust Center](#) button in the side panel, then (ii) select the [Trust Center Settings](#) button under the Microsoft Excel Trust Center” section, which gives access to the Trust Center window.

Figure A3: Microsoft Excel Options Window and Opening the Trust Center Settings

Step 4: In the Trust Center window (Figure A4), (i) choose [Macro Settings](#) button in the side panel, (ii) select the [Disable all macros with notification](#) bullet under the Macro Settings section, and (iii) press the [OK](#) button.

Figure A4: Trust Center Window and Disabling All Macros with Notification

The next time an Excel file with macros is opened, a security warning message bar will be displayed (Figure A5).

Figure A5: Security Warning Message Bar

The SLAM Excel file should now be working. Note, however, that in some older versions of Excel, only selecting [Enable Content](#) seems to work after saving the file and reopening the file.

Glossary

actuarial analysis	– form of statistical analysis typically conducted using health-related financial cost data in the context of calculating insurance premium rates or otherwise determining expenditure needs. It entails estimation of average healthcare expenditures of a risk pool so that financing needs can be estimated to ensure that revenues balance expected outlays
actuarial soundness	– financial sustainability; implies that expected expenditures (including administrative costs and any reserve requirements) for a risk pool be less than or equal to expected revenues
administrative loading	– represents the costs for running the health insurance program; it is typically defined as a percentage of the expected health payouts, a fixed amount or a combination of both
benefit package	– includes what services are covered at which healthcare facilities, what approvals are needed to obtain insurance benefits, and the limitation of the insurance coverage, among others
claim	– an event reported by the policy holder for which she/he demands economic compensation
claim frequency	– number of claims divided by the duration, for some group of policies in force during a specific time period
claims severity (average cost per claim)	– total claim amount divided by the number of claims
combined ratio	– ratio of the claim amount plus administrative expenses to the earned premium
dropout rate	– proportion of members who lost insurance membership out of target populations
duration of a policy	– amount of time the policy is in force, usually measured in years
earned premium	– amount of the premium income that covers risks during the period under study. Commonly, premiums are assumed to be earned <i>pro rata temporis</i> , i.e., linearly with time. This means that the earned premium is the duration, measured in years, times the annual premium
eligible member	– an individual who can obtain health insurance benefits after satisfying the compulsory membership requirements

enrollment	– process by which a member is signed up in the health insurance program
gross premium	– pure premium (defined below) plus operational expenses of the insurance program, profit margins and risk loading
group enrollment	– type of health insurance enrollment scheme which provides coverage to a group of members, usually comprised of company employees or members of an organization, e.g., cooperatives
health insurance	– insurance against loss through illness or injury of the insured; especially insurance providing compensation for medical expenses and often income for disability
health needs	– latent needs of the population in terms of healthcare services they need
health service	– services that are obtained from a hospital, clinic, or other types healthcare provider; this may include but not limited to consultation, a night spent at a health facility, a delivery, or surgery
health service category	– groupings by which the health services covered by health insurance packages are organized into
insurance	– coverage by contract whereby one party undertakes to indemnify or guarantee another against loss by a specified contingency or peril
key ratios	– claim frequency, claim severity, pure premium and loss ratio
loss ratio	– claim amount divided by the earned premium
mandatory enrollment	– process of enrolling selected/targeted uninsured people automatically in a health insurance plan
profit margin	– represents the profit of the health insurance program; it is typically defined as a percentage of the expected health payouts or a percentage of the positive operational cash flow
pure premium	– total claim amount divided by the duration; it is the product of the claim frequency and the claim severity
retention rate	– percentage of members of the target population that re-enrolls at the end the specified period of enrollment (i.e., is still there at the beginning of the next period).
risk loading	– represents the uncertainty of actuarial estimates, the probability and size of the estimate being smaller than the actual payout; it also shows how big the risk is in the opinion of the insurer is willing to run; this is typically defined as a percentage of the expected health payouts
risk pool	– the group of health insurance members who together share the risks (e.g., the risk of financial costs due to hospitalization)
target population	– the population that is considered for insurance coverage
uptake	– enrollment in the health insurance program

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Manual on The Simple Linear Actuarial Model

This Simple Linear Actuarial Model (SLAM) manual is the accompanying publication to An Actuarial Model for Costing Universal Health Coverage in Armenia. It provides detailed guidelines in using the Microsoft Excel for SLAM. As an actuarial model, the SLAM calculates and presents the actuarial projections and key financial indicators to support the management of the health insurance programs nationwide and at local levels in assessing the overall costs and financial sustainability of health insurance programs. The goal is to have an actuarial model that they could update themselves without frequent intervention of actuarial experts and use for day-to-day management and assessment of alternative policy configurations of the health insurance schemes.

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