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I. ACRONYMS

ACT  Acceleration of Children’s HIV/AIDS Treatment Initiative
APR  Annual Progress Report
ART  Antiretroviral Therapy
ARV  Antiretroviral Drugs
CBCTS Community-Based Care, Treatment and Support
CBTC Community-Based Testing and Counseling
CDC  Center for Disease Control and Prevention
COP  Country Operational Plan
DOD  Department of Defense
EA   Expenditure Analysis
EATAP Expenditure Analysis Technical Assistance to Partners
FBCTS Facility-Based Care, Treatment and Support
FSW  Female Sex Workers
HSS  Health Systems Strengthening
HTC  HIV Testing and Counseling
KP   Key Population
LAB  Laboratory
M&O  Management & Operations
MAT  Medication Assisted Therapy
MSMTG Men Who Have Sex with Men and Transgender
OI   Opportunistic Infections
OTC  Optimized Treatment Costing tool
OVC  Orphans and Vulnerable Children
OVP  Other Vulnerable Populations
PBAC PEPFAR Budget Allocation Calculator
PEP  Post Exposure Prophylaxis
PEPFAR President’s Emergency Plan for AIDS Relief
PITC Provider-Initiated Testing and Counseling
PMTCT Prevention of Mother to Child Transmission
PP   Priority Populations
PREV Prevention
PWID People Who Inject Drugs
RTK  Rapid Test Kits
SI   Strategic Information
UE   Unit Expenditure
USAID United States Agency for International Development
USG  United States Government
VCT  Voluntary Counseling and Testing
VMMC Voluntary Medical Male Circumcision
II. INTRODUCTION

The National Optimized Treatment Costing (OTC) tool is a tool designed to calculate total and unit costs of different optimized treatment scenarios for antiretroviral therapy (ART). When national level data are entered, the tool can help policymakers undertaking overall national strategic planning. The primary intent of the OTC tool is to serve as a user-friendly tool where cost data from ongoing studies and/or expenditure data can be used to build, compare and conduct analyses.

The tool is designed to answer questions such as:

- Where will cost savings occur when treatment scenarios are changed?
- Which optimized treatment scenario provides the greatest cost savings?
- What is the total projected cost for different treatment scenarios annually for the next five years, by patient type (with sub-totals for key components)?
- What is the overall unit cost by patient type for different treatment scenarios?

The tool cannot answer questions such as:

- What is the most cost-effective optimized treatment scenario? (i.e., new HIV infections are not calculated)
- What is the impact of optimized treatment scenarios on numbers of people requiring treatment? (i.e., there are no parameters regarding continuation, lost-to-follow-up, etc. – all patient populations are provided by the user)
- What is the impact of optimized treatment scenarios on the ARV pipeline required? (e.g., switching from monthly to quarterly ARV supply)

The OTC tool compares the cost of a "Current" scenario with the cost of up to three different user-specified optimized treatment scenarios. There are several steps in setting up the tool. First, the "Current" practice scenario is specified for each of five policy levers (Task allocation for facility-level provider visits, Visits, Laboratory tests, Antiretroviral drugs (ARVs), and Other commodities). Then, up to three optimized treatment scenarios are specified for each of the five policy levers in their individual worksheets. Finally, in the “Inputs-Scenario selection” tab, the user can mix and match among the five policy levers to create up to three different overall scenarios. This allows for a great deal of flexibility, as there are many different combinations possible among the five policy levers. For example, one overall scenario could be a combination of all of the second “optimized treatment” scenarios (Task allocation #2, Visits #2, Labs #2, ARVs #2, Other #2) while a second overall scenario could utilize a mix of “optimized treatment” scenarios (e.g., Task allocation #1, Visits #2, Labs #3, ARVs #1, Other #3). The outputs from the three overall scenarios are then compared with the outputs from the "Current" scenario. Outputs includes total cost and unit cost/expenditure, disaggregated by key components and by patient type (newly initiating, stable, unstable for each of adults, children, PMTCT clients, and key populations). The OTC tool was developed under the technical guidance of the EATAP management team; input was also provided by many teams at USAID.
Data requirements include (see Figure 1):

Figure 1: List of required data

<table>
<thead>
<tr>
<th>Program data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Number of patients for five years, by patient type (newly initiating, stable, unstable for each of adult, pediatric, PMTCT and key populations)</td>
</tr>
<tr>
<td>2. Number and type of service delivery visits per year for “Current” and for up to three “Optimized” scenarios by patient type (some of the “Optimized” scenarios may be the result of policy discussion rather than actual data)</td>
</tr>
<tr>
<td>3. Number and type of lab tests per year for “Current” and for up to three “Optimized” scenarios by patient type (some of the “Optimized” scenarios may be the result of policy discussion rather than actual data)</td>
</tr>
<tr>
<td>4. Regimen mix for ARVs per year for “Current” and up to three “Optimized” scenarios by patient type (some of the “Optimized” scenarios may be the result of policy discussion rather than actual data)</td>
</tr>
<tr>
<td>5. Amount of “Other commodities” (e.g., condoms, cotrimoxazole) per year for “Current” and up to three “Optimized” scenarios by patient type (some of the “Optimized” scenarios may be the result of policy discussion rather than actual data)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost/Financial Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Number of minutes by cadre for facility-based provider visits for “Current” and up to three “Optimized” scenarios by patient type (some of the “Optimized” scenarios may be the result of policy discussion rather than actual data)</td>
</tr>
<tr>
<td>7. Wages by cadre including benefits and training costs</td>
</tr>
<tr>
<td>8. Unit cost of all service delivery visits (non-wage facility visit unit costs, other visits as specified)</td>
</tr>
<tr>
<td>9. Unit cost of ARVs, lab tests and other commodities</td>
</tr>
<tr>
<td>10. Previous Unit Expenditures for FBCTS, PMTCT and CBCTS (for comparison purposes)</td>
</tr>
</tbody>
</table>

The purpose of this User’s Guide is to outline, step-by-step, the process of entering inputs and generating results using National OTC. Users are encouraged to maintain careful notes and input these notes into the relevant sections of the “Notes Page” so that there is a clear justification for each assumption and also so future users of the tool can better understand how previous estimates were developed. Each worksheet has a Notes section associated with it.

III. GETTING STARTED

III.1 Background

National Optimized Treatment Costing (OTC) tool is an Excel workbook. The tool is used in conjunction with data gathered from facility visits and implementing partners, as well as other sources. In addition, note that cost data from ongoing studies and/or expenditure data can be used to build and/or compare scenarios.

Please note that all figures presented in this User’s Manual are presented for illustrative purposes only and are not based on any actual budgets, unit expenditures, targets or pipeline figures. Also, the
workbook is protected; data can be entered in the light blue cells, while all other cells are protected and cannot be modified.

**III.2 Navigation**

OTC contains the following twelve worksheets:

- Instructions
- Acronyms
- Task allocation
- Visits
- Labs
- ARVs
- Other comm
- Input-Pop&Costs
- Inputs-Scenario selection
- Summary
- Unit Costs
- Notes

The tool was designed so that users input data moving from left to right; once this process is completed, the final tabs are used for creating scenarios and displaying output. As such, at the beginning of the application the user should first glance quickly at the “Inputs-Scenario selection” tab, in order to get an idea of how the scenarios will be created and manipulated, and then return to the beginning of the workbook to begin filling in the data.

Section IV below contains details about each of the input tabs, while Section V describes both the “Inputs-Scenario selection” tab, including how to vary selections, and the material in the output tabs.

**IV. INPUT WORKSHEETS**

This section provides more detail about the different input worksheets in OTC. A summary of all of the worksheets is first provided, followed by a detailed description for each individual worksheet of the data requirements and data input procedure.

**IV.1 Summary of worksheets**

The first two worksheets—Introduction and Acronyms - are fixed and should not be altered by the user. The Introduction worksheet provides basic user instructions. The Acronyms worksheet provides a summary of all acronyms used throughout OTC.

Worksheets three to seven record the data for current treatment practice and defines up to three optimized treatment scenarios for each of the five policy levers. Worksheet eight records number of patients by patient type for five years; salaries for clinical staff; and all other unit costs for visits and commodities used in the tool. Examples of data sources include primary data from service providers, e.g., data on costs and service utilization, and macro-level policy documents that contain information, e.g., data for national targets for adults on ART. Note that, even if some variables are set to zero, the
model will still calculate results (e.g., staff wages set to zero will then result in personnel costs equal to zero for provider visits).

Worksheet nine (“Inputs-Scenario selection”) allows the user to create up to three different optimized overall scenarios by altering any one (or all) of the following key policy levers: task shifting of clinical staff at the facility; types and numbers of service delivery visits; types and numbers of laboratory tests; distribution of ARV regimens within a population group; and use of other treatment commodities such as non-ARV drugs. The background optimized treatment scenario choices for each of these levers are defined in their respective worksheets (worksheets three to seven, described immediately above).

Worksheets ten and eleven display the results of the analysis. In “Summary,” total costs for the five years are displayed, disaggregated by patient type and also by key cost components. In “Unit Costs,” the calculated unit costs for all four scenarios (“Current” plus the three “Optimized” scenarios) by patient type are compared.

Worksheet twelve, Notes, is where documentation for individual worksheets is recorded; e.g., the basis or the source for the data might be entered here. Worksheets three to eleven contain a “Notes page” button, located at the top left. By clicking on the “Notes page” button, the user will be taken to the Notes worksheet which contains a worksheet-specific space for documenting notes. Once notes have been completed, there is a “Return” button in the Notes worksheet which takes the user back to the original worksheet.

IV. 2 Individual policy lever worksheets

The following worksheets - Task allocation; Visits; Labs; ARVs; and Other comm - are where data should be entered representing current treatment practice, and where different optimized treatment scenarios (up to three) are defined. Default lists of personnel types, number and type of visits, laboratory tests, ARVs, and other commodities have been provided in the top (“Current”) panel, but can be modified by the user. These lists are then utilized in the different optimization scenarios below; that is, they cannot be altered in any of the three optimized scenarios below, and initial default values are also harmonized with the top panel.

Please note: If the impact of a new technology is to be examined in any of the lower panels (e.g., new personnel type, ARV drone delivery), it must be included in the initial list in the top panel.

Data to populate the different optimized scenarios can be derived from a number of sources:

- Primary research gathering data for the sole purpose of populating OTC
- Data (including time-use data) from ongoing studies (e.g., those conducted by EQUIP, etc.)
- Data (including time-use data) gathered in-country for another purpose that can be adapted
- Data (including time-use data) gathered in another country that can be adapted
- Data derived from the published literature
- ART treatment and other guidelines (e.g., WHO, PEPFAR, etc.)
- Input from expert groups gathered to provide input into possible treatment scenarios

Since some of the optimized treatment approaches may be new, there may not be actual data measuring the proposed approach. Thus expert group input may be a good source, both for validating existing data assumptions and for developing data for use in the new approaches.
Worksheet three: Task allocation

This worksheet records the staff time (in minutes) required to deliver treatment services for a provider visit at a facility to one patient for one visit (see Figure 2). Data are recorded by different population groups (Adult ART; Pediatric ART; PMTCT; and Key Populations) and by patient type (Newly initiating on ART; Stable on ART; Unstable on ART). Data for this worksheet can be gathered from individual facilities within the country, e.g., by asking staff directly the average time they spent during a visit. If data are collected for multiple facilities, then staff time can be averaged across the facilities. In addition, other data sources may be able to provide these data, such as studies in the literature or possibly national data sources.

Figure 2: Task allocation at facility for one provider visit: Current and optimized scenarios

<table>
<thead>
<tr>
<th>FACILITY</th>
<th>Adult ART</th>
<th>Pediatric ART</th>
<th>PMTCT</th>
<th>Key Populations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>0.16</td>
<td>0.20</td>
<td>0.10</td>
<td>0.20</td>
</tr>
<tr>
<td>Nurses</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Midwives</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Social workers</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Clinical officers</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Medical assistants</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Nursing assistants</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Lab technicians</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Pharmacy technicians</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Auxiliary nurses</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Facility administrators</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Human resource managers</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>M&amp;E advisors</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Community volunteers</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Other #1</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Other #2</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Other #3</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>21 Enter up to 3 optimized treatment scenarios below. Remember to both name and describe each scenario in the appropriate box.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Column A reflects the different staff cadres involved in delivering services; since the cells are in light blue, labels can be edited to reflect each country setting. The first set of data (rows 8 to 25 under the heading “Current Practice”) is entered in columns B through N representing the current treatment scenario, for each patient type. So, for example, the data above show that doctors spend 20 minutes for each provider visit at a facility for each patient type in the “Current Practice” scenario.
The three subsequent panels allow the user to define up to three different optimized treatment scenarios. As described above, staff cadre labels cannot be changed, however the values in columns B through N can all be changed for all three scenarios; note that the initial values are programmed to reflect the values from the “Current” scenario.

Note that the name of each optimized scenario should be entered into its respective cell (e.g., for the first optimized scenario it is cell B27, shown in Figure 2 above), while a more complete description of the scenario should also be entered in its respective cell (e.g., for the first optimized scenario it is cell G27). The names and descriptions of the optimized scenarios will be used later when setting up the overall scenarios and examining outputs to identify the various results. Data sources for the optimized scenarios include primary data collection carried out for this application, as well as data that might be available from other studies (e.g., data from EQUIP studies, etc.), official guidance documents or expert groups. Note that, for this tab, time-use data are required, which are rare in the published literature.

The first optimized scenario in Figure 1, named “50% to nurses,” shifts 50% of the doctor’s time as shown in the “Current” scenario to the nurse, so that 10 minutes is deducted from the 20 minutes of doctor’s time in the “Current” scenario (resulting in 10 minutes in the first optimized scenario), and 10 minutes is added to the nurse’s time (resulting in 20 minutes in the first optimized scenario). Further details of scenario development are provided in Section V.

Worksheet four: Visits

This worksheet records the average annual number of service delivery visits per patient (by population group and by patient type) (see Figure 3). Data are gathered from all service delivery modes (e.g. clinic visits; pharmacy service delivery modes; community/outreach service delivery modes, etc.) within a country for the existing practice.

Data on the current annual number of visits are entered in columns B-N in rows 8-17 under the heading “Current Practice.” For example, Figure 3 shows that the current treatment scenario for adult patients who are newly initiating ART is that they have, on average, 10 clinic visits, 2 Community adherence counseling visits, and 2 Other delivery visits in their first year.

The user can then define up to three different optimized treatment scenarios in the three subsequent panels. Again, data sources for these inputs include primary source data gathering to populate this tool, data from other studies (e.g., those conducted by EQUIP, etc.), official guidelines and expert groups. In this case, most likely ART treatment guidelines may help in determining new scenarios, along with expert opinion and any relevant data.

As described above for the “Task allocation” tab, labels should be entered both naming and describing the different scenarios. In the example provided in Figure 3, the name of the first optimized scenario is labeled “Decrease provider visits” in cell B:19. This scenario reduces the number of provider visits for everyone by 50%; the label for its description reads, “Provider visits are decreased by half” in cell G:19. Further details of scenario development are provided in Section V.

Please note one difference here compared to the other policy lever worksheets: “Provider visit” is fixed, i.e., it cannot be changed or written over (it is color-coded white, a protected cell, rather than light blue,
a data entry cell). This is because the values in the “Task allocation” worksheet apply to Provider visits, and as such there will always have to be that particular visit in order for the calculations to function properly.

Figure 3: Visits - Current practice and optimized scenarios

Worksheet five: Labs

This worksheet records information on the average annual number of laboratory tests per patient, by population group and by patient type (see Figure 4). Data can be obtained from facilities, country policy or standard protocol documents, or other guidance documents. Entering zeroes will simply result in zero costs calculated for the lab tests subcategory.

Similar to the previous policy lever tabs, the names of the lab tests should be entered in Column A for the “Current Practice” scenario; these names will be repeated in the optimized scenarios below, so be sure to enter any new lab tests that might be coming available in the next five years that would be included in optimized scenarios. The number of annual laboratory tests according to the current treatment protocol are then entered in columns B-N in rows 6-15 under the heading “Current Practice.”
The three subsequent sections enable up to three optimized scenarios to be defined. These scenarios can be based on newly-gathered data, new guidelines, expert opinion, etc. In the case of new lab tests coming available in the next five years, data are probably not available to enter into the optimized scenario specifications; sometimes even the manufacturer’s documentation can be used to infer number, frequency and price of new tests. In the example provided in Figure 4, the name of the first optimized scenario is labeled “Reduced VL for Stable” in cell B:19. This scenario reduces the number of VL tests required by stable patients from two per year (as in “Current”) to one per year. Further details of scenario development are provided in Section V.

**Figure 4: Laboratory tests - Current practice and optimized scenarios**

**Worksheet six: ARVs**

In this worksheet the percentage of patients on different treatment regimens are entered for each patient type (see Figure 5). These data are calculated from patient data gathered at the facility level or from other guidance documents. If no ARVs are being purchased, zeroes should be entered everywhere, and the results will display zero costs for the ARV subtotal (i.e., the tool will still display results for other subtotals, as well as totals).
The default labels for the first four regimens are “Adult 1st line,” “Adult 2nd line,” Pediatric 1st line,” and “Pediatric 2nd line.” Given the rapidly changing ARV landscape, this worksheet explicitly makes room to enter up to four new 1st line regimens (3 adult, 1 pediatric) and two new 2nd line regimens (1 adult, 1 pediatric). Any of the names of the different regimens can be changed; note, however, that the designation of adult vs. pediatric needs to be maintained for calculation purposes.

This worksheet contains subsequent sections that enables up to three optimized scenarios to be defined. Data can be obtained from guidance documents or expert groups, or any other sources described above. As an example, the first optimized scenario in Figure 5 is labeled “20% to DTG” in cell B:19, that is, 20% of all adult patients will be switched to DTG; in this case, the percentage of all adults on the “Adult 1st line” in the “Current Practice” is reduced by 20 percentage points in the new optimized scenario. Further details of scenario development are provided in Section V.

**Figure 5: ARVs - Current practice and optimized scenarios**

Note one characteristic unique to this worksheet. When the sum of the regimen percentages do not sum within a patient type, an error in red appears, “Sum≠100” (see Figure 6 below). This is to ensure that all patients are counted as receiving some kind of regimen.
Worksheet seven: Other commodities

In this worksheet the percentages of patients on other treatments are entered (see Figure 7). There are a few default treatments listed (e.g., cotrimoxazole) but there are many lines for users to enter other treatments, as these tend to be country-specific. The data can be gathered either from facility visits or from standard guidance documents. The worksheet contains subsequent sections that enables up to three optimized scenarios to be defined and named.

In the example provided in Figure 7, the name of the first optimized scenario is labeled “Add Isoniazid” in cell B:19. This scenario adds Isoniazid for all ART patients receiving Cotrimoxazole. Further details of scenario development are provided in Section V.
Worksheet eight: Input-Pop&Costs

This worksheet requires inputs for patient populations and all cost-related data. There are seven different sections of data to be entered: patient population inputs, wages and benefits of clinical staff, clinic unit costs, other visit costs, costs of ARVs, costs of laboratory tests, and costs of other commodities. Note that there are no “Current” vs. “Optimized” values for these data; there is only one constant value.

The first step is to specify the first year of the projection in cell B3 (see Figure 8).

In order to enter the patient population, enter the actual numbers for each patient population where specified. Note that, in either case, the number of Key Population patients must be entered in the final panel where specified (line 39).

In all cases, the percentage of each population group on the different regimens is required; note that the ARV regimen for HIV Exposed Infants is assumed to be the Pediatric 1st line ARV regimen.
The second major section for data entry in this worksheet is the information required to calculate the annual salary for each cadre of worker (see Figure 9). Note that the list of Personnel Types is read from the earlier “Task allocation” worksheet, and cannot be changed (the cells are white). In column B, enter the annual, full-time equivalent (FTE) salary for each personnel type that is paid for by PEPFAR. These data can be gathered from facility administrators or local/national authorities. Then either confirm or change the values for benefits (assumed to be 10% of wages) and training (assumed to be 10% of wages + benefits). Note that, if training is included as a separate line item in the facility unit cost (described further below), it should not be included here, and can be zeroed out. The user should also input the hours worked per week and the number of weeks worked per year; the default assumptions are that each FTE works 40 hours per week and 48 weeks per year, but again, these assumptions can be changed.
The third panel of data to be entered is the remainder of the unit costs for clinic visits – i.e., they do *not* include direct staff costs, which are calculated based on the data just entered. In addition, because costs of ARVs, laboratory tests and other commodities (as specified) are calculated separately, these costs should *not* be included here, either. These data are likely to be based on facility-level interviews, but might also be available in the published literature.

Figure 10 below shows the *direct* and *indirect* unit cost information for providing treatment services excluding commodities (e.g. ARVs; lab tests; and other commodities as specified) and direct staff salaries. Direct costs include consumable (e.g., syringes, gloves) and nonconsumable supplies (e.g., gowns). Indirect costs can be classified into capital (e.g., buildings and equipment) and recurrent (e.g., ongoing maintenance and utilities, support staff, management/supervision) costs. After indirect costs are apportioned according to patient load, the unit cost is calculated by dividing annual costs by the total number of patients served in one year.
The fourth panel of information to be entered is the unit cost of all of the other visits, as specified in the “Visits” tab, excluding ARV costs, which are calculated elsewhere. Note that the visit types are read in from the earlier tab, and cannot be changed here (see Figure 11). Recall that any new type of visit needs to be entered in the “Visits” tab, and will then be reflected here.

The fifth panel of data required is for ARV costs. Again, note that the regimens listed are read in from the “ARVs” tab. Enter the average monthly unit price for each regimen for both “Drugs only” and also for “Other charges.” Please note that the price entered for both "Drugs only" and "Other charges" should be per unit, not a lump sum amount. The default value for "Other charges" is 17% of the "Drugs only" price (see Figure 12), but this can be changed.
The sixth set of data to be entered is the cost of laboratory tests, the names of which are read from the “Labs” tab. Enter the average unit price for each laboratory test. The price entered for both “Product” and "Other charges" should be per test, not a lump sum amount. The default value for "Other charges" is 17% of the Product price, but this can be changed (see Figure 13).
Finally, the last set of information required is for the unit costs of the other commodities specified in the labels found in the tab “Other comm.” Enter the average unit price for each of the commodities as previously specified. The unit cost (including other charges) for adult patients should be entered in column B, while the unit (including other charges) for pediatric patients should be entered in column C (see Figure 14).

Figure 14: PEPFAR-specific unit costs for other commodities as specified

V. SCENARIO CHOICE AND RESULTS

Worksheet nine: Inputs-Scenario selection

In this worksheet, all of the work setting up the different optimized scenarios for each of the five policy levers will be utilized. Enter your country name in cell B3. Then define up to three overall optimized scenarios to compare with the "Current" scenario by selecting an option from the respective drop-down menu for each of the five policy levers (Task allocation, Visits, Labs, ARVs, Other commodities). Name each overall Policy scenario in the appropriate box in column C, as that will be used in the display of the results. Note that the full description of each policy lever scenario (defined before) will appear automatically in column C, with a white (protected) background, under the named overall scenarios (which will be entered in the blue-highlighted cells).

Figure 15 below illustrates the result of selecting the first optimized Policy scenario for each of the five policy levers, as specified in the sample application in this user’s guide:
There are three different sets of results in the tenth worksheet, which is labeled “Summary”: total annual costs (in both chart and tables), a comparison of cumulative costs across all five years for all Policy scenarios; and finally a comparison of dollars saved and percentage savings of the “Current” vs. all of the optimized Policy scenarios.

The first set of results, the total annual cost, is displayed in a chart in the upper left-hand side of the worksheet. Further detail is provided in tabular form, with sub-totals by patient type and by scenario, beginning in line 30 (see Figure 16). Both the chart and the data from the tables can be copied and pasted into documents, as required. The data can also be copied and pasted into another Excel workbook, should further calculations or manipulations be required. In Figure 16, because only the first scenario contains parameters that are different from the “Current” scenario, that is the only scenario which shows a different set of values for the time period.
The results are then aggregated and the cumulative comparison between “Current” and optimized Policy scenarios is displayed in the stacked bar charts beginning in column F. In addition, the comparison is carried further by calculating both the actual difference in the cumulative amounts for “Current” vs. optimized Policy scenarios, and the percentage difference between the cumulative amounts of “Current” and the optimized Policy scenarios, and displaying those results in tabular format beginning in column M. Note again that, since the only parameter changes in this sample were input for the first optimized Policy scenario, the stacked bar chart shows the same results for “Current” and the second and third optimized Policy scenarios. In addition, the only entry in the comparison table is for the first optimized Policy scenario; i.e., the second and third Policy scenarios are exactly the same as “Current” and thus do not show any cost savings (see Figure 17).
Worksheet eleven: Unit Cost tables

The final results worksheet is labeled “Unit Costs,” and compares the unit costs calculated by the tool, by scenario and by patient type. Note that the unit costs calculated by National OTC do not include above-service delivery costs (e.g., program management or strategic information).

Several charts are displayed, and can be copied and pasted into documents, as required by the user (see Figure 19):

- Comparison of Adult ART Unit Cost by Patient Type and Scenario
- Comparison of Pediatric ART Unit Cost by Patient Type and Scenario
- Comparison of PMTCT ART Unit Cost by Patient Type and Scenario
- Comparison of Key Populations ART Unit Cost by Patient Type and Scenario
Figure 18: Unit Cost charts