Revised 2018

# IMPACTNOW MANUAL VERSION 2.0

Estimating the Health and Economic Impacts of Family Planning Use







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Estimating the Health and Economic Impacts of Family Planning Use

AUGUST 2015

**REVISED SEPTEMBER 2018** 

Health Policy Project and Marie Stopes International

The information provided in this document is not official U.S. Government information and does not necessarily represent the views or positions of the U.S. Agency for International Development.

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## **ABBREVIATIONS**

CPR contraceptive prevalence rate DALY disability-adjusted life year

FP family planning

FP2020 Family Planning 2020 HPP Health Policy Project

ICER incremental cost-effectiveness ratio

IUD intrauterine device

LAPM long-acting and permanent method

MMR maternal mortality ratio
MSI Marie Stopes International
PBI previous birth interval

USAID United States Agency for International Development

WRA women of reproductive age
YLD years lost to disability
YLL years of life lost

#### INTRODUCTION

ImpactNow is an Excel-based model that estimates the health and economic impacts of family planning (FP) in the near term. It is designed to model the impacts of different policy scenarios, and to compare the results of those scenarios in advocacy materials. It can help to estimate the impacts of many "what if" questions about policy options. ImpactNow is designed to analyze impacts in the two- to seven-year time horizon; for example, it could be used to estimate the impacts of meeting Family Planning 2020 (FP2020) commitments. The outcomes are focused on reproductive health metrics, as well as economic metrics, such as cost-benefit ratios and incremental cost-effectiveness ratios (ICER).

ImpactNow was adapted from Marie Stopes International's (MSI) Impact 2 as a collaboration between MSI and the Health Policy Project (HPP), with support from USAID. While Impact 2 is more focused on estimating the effectiveness of the FP services provided by one institution, ImpactNow is more focused on the impacts from all national and regional-level providers. Further, the ImpactNow model is designed to be user-friendly with click-through navigation, default data, and automatic scenario comparison.

Since its launch, the ImpactNow model has been revised to reflect changes in methodology, data updates, and other new features. Under the USAID-funded Health Policy Plus (HP+) project, ImpactNow was revised in September 2018. This 2.0 version of ImpactNow features the following additions:

- **Youth-only option**: users have the option to calibrate the model for only a youth population (either all youth ages 15–19 or only youth in union, ages 15–19)
- New default database: the model features an updated database, with the latest available values for each country or region across model input data categories
- New display features: the model features an "infographic" option, embedded in the results section, allowing users to present model results in a visually compelling way for diverse audiences
- **Expanded methodological alignment**: the ImpactNow 2.0 methodology has been revised to harmonize the computation of select outputs with other FP modeling efforts (Askew et al., 2017)

The Health Policy Project, supported by USAID, authored this user manual to help health analysts use the ImpactNow model to estimate the health and economic impacts of FP programs. The manual is divided into two main sections: "Getting Started" and "Methodology." The Getting Started section is written as a quick-start guide on the navigation and flow of pages, and offers a brief explanation of each page of the model. Individual inputs and outputs are not explained in detail. The Methodology section serves as a reference for users who want more detail about the calculations and assumptions.

#### **GFTTING STARTED**

#### Scenarios

The comparison of different scenarios is at the heart of ImpactNow. A scenario is defined by a full set of input data and assumptions about the future of various parameters. These scenarios are the framework used to answer many "What if?" questions about future FP policy and behavior.

For example, analysts might want to know, "What are the financial and economic benefits to switching to greater use of long-acting and permanent methods (LAPMs)?" Alternatively, they may ask, "What impact would reaching our FP2020 commitment have on women's reproductive health in our country?" Constructing and comparing different scenarios allows them to answer these questions.

ImpactNow is designed to compare three scenarios at once. In the calculations, the first scenario serves as a baseline against which the second and third scenarios are compared. Thus, the first scenario should be some type of business-as-usual, base case, or constant. It could be a scenario where all parameters are held constant into the future, or it could be a scenario where past trends are continued, uninterrupted, into the future. The second and third scenarios should represent specific policy goals or interventions. The first scenario serves as a counterfactual against which analysts can measure the incremental impacts of the second and third policy scenarios.

When you open the ImpactNow file, you will see a Welcome page that gives basic information about ImpactNow and the version number. 1 Click on the "Next" arrow to continue.

## **ImpactNow**







Version 2.0 - revised September 2018

About

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For more information contact: policyinfo@thepalladiumgroup.com

Note: You must enable macros to use the ImpactNow Model. Please contact us to report any bug.

<sup>&</sup>lt;sup>1</sup> The ImpactNow file may be unlocked by copying "unlockFG" into your clipboard, and then clicking the "Next" arrow on the Welcome page. To lock the file again, copy "lockFG" into your clipboard and then click the "Next" arrow on the Welcome screen.

## Navigation

You can navigate through the pages of ImpactNow in two ways: the navigation bar at the top of each page and the "Previous/Forward" arrows on the upper right of each page.

Along the top of each page is a navigation bar. This bar is visible on all pages in the model (other than the Welcome page) and allows you to go directly to any section (or page). Your current location is indicated by the button in dark blue.



The Previous/Forward arrows in the upper right of each page move you through each section, in sequential order.



The page sequence used by the Previous/Forward arrows follows the map of all pages in ImpactNow:

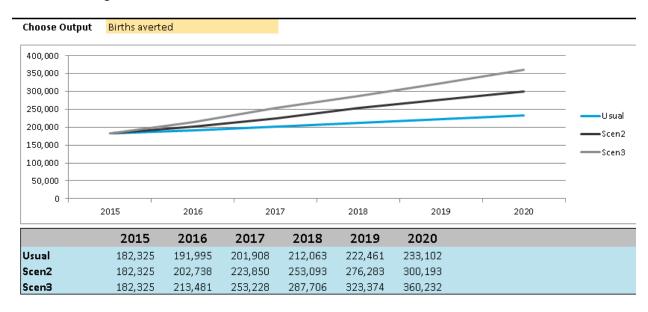
- Configuration
- Inputs
  - o Business-as-usual Scenario
    - Health Indicators
    - Effectiveness of Contraceptives
    - Median Age of Use for Contraceptives
    - Healthcare Utilization per Pregnancy
    - Healthcare Utilization per Birth
  - o Scenario 2
    - Health Indicators
    - Effectiveness of Contraceptives
    - Median Age of Use for Contraceptives
    - Healthcare Utilization per Pregnancy
    - Healthcare Utilization per Birth
  - o Scenario 3
    - Health Indicators
    - Effectiveness of Contraceptives
    - Median Age of Use for Contraceptives
    - Healthcare Utilization per Pregnancy
    - Healthcare Utilization per Birth
- Set Policy Goals
  - o CPR/Unmet Need/Future Budgets (depending on Configuration)
  - Method Mix
  - o FP Costs
- Outputs
  - Indicator Analysis
  - Summary Tables

- o Scenario Comparison
- o Incremental Cost-Effectiveness Ratio

Throughout the model, all cells with values that you can change are shaded in yellow.

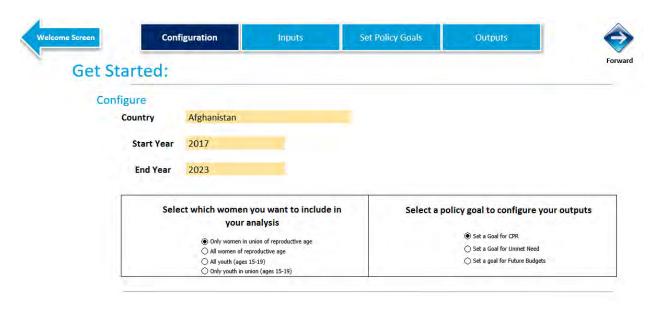


Results are in light blue.

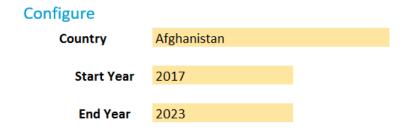


## Configuration

The first page after the Welcome page is the Configuration page, where you will make some general decisions about your analysis. To the upper left is an arrow that takes you back to the Welcome page; the "Forward" arrow on the upper right can be used to guide you through the pages.



First, you must choose the country and years of your analysis. These values can either be selected from the drop-down menu or typed in manually. The range of possible values for years is 2013 to 2023.



The next choice in the Configuration page is whether you will conduct your analysis considering all women or only those in union, as well as a choice between the age group 15–49 or the age group 15–19. The group you choose will constitute the population potentially at risk for unintended pregnancy, and who may therefore benefit from FP use. Make your selection using the radio buttons.

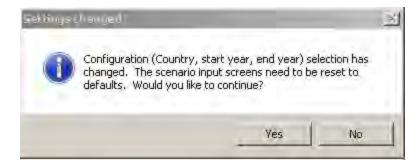
## Select which women you want to include in your analysis

Only women in union of reproductive age
All women of reproductive age
All youth (ages 15-19)
Only youth in union (ages 15-19)

The final choice on the Configuration page is the type of policy goal you would like to model. There are three choices: "CPR" (contraceptive prevalence rate), "Unmet Need," and "Future Budgets." Select the option that corresponds to the type of goal whose impact you'd like to analyze, or the goal you'd like to promote in your advocacy messages.



When you've finished configuring your analysis, you can move on to the Inputs page. If you've changed anything in the Configuration page, a dialog box will appear when you click away from it, asking if you would like to continue with your new selections.



This dialog box is a warning that the default data will be reset to align with your new selections. If you agree with this, click "Yes." If you have inadvertently made changes on the Configuration page that you do not wish to implement, click "No."

## Inputs

Inputs are entered separately for each of the three scenarios. Within each scenario inputs are organized into five thematic categories. When in the Inputs page, there is a smaller navigation bar for the three scenarios under the main navigation bar. Like the larger navigation bar above it, the buttons on this bar can be used to move directly between scenarios. The dark blue button shows your current location.



#### Scenario names and default data

Near the top of the page under the "Health Indicator" heading is a place to name the scenario. You can enter any text into the yellow box. The name you give each scenario will automatically appear throughout the model. It is recommended that the first scenario represent some type of business-as-usual scenario that models what you might expect to happen in the absence of specific policy interventions. Such names could be "business-as-usual," "base case," or "constant," depending on the assumptions you make. The names for the second and third scenarios may be shorthand for the policies or assumptions they model.

Just below the scenario name are buttons that can load inputs into the scenario. In the first scenario, there is only one button; this button loads the defaults for your country and years. (These defaults are already loaded when you leave the Configuration page; this button will reload them, overwriting any changes you have made to the defaults.) In the second scenario, there are two buttons: the first to "Load Default Data," and the second to load the same inputs as the first scenario. In turn, the third scenario has three buttons: to "Load Default Data," to load the inputs from the first scenario, and to load the inputs from the second scenario. Below is an example from the third scenario.



Each of the five input categories contains cells to enter the values of the parameters and to note the sources. Default values are provided for each parameter. When you have more specific or up-to-date data, or a trusted data source you prefer to use, you may replace any of the defaults. Be sure to note your source in the "Source" cell

#### Healthcare utilization

The "Healthcare utilization per pregnancy" and "Healthcare utilization per birth" inputs are used to calculate the costs averted when an unintended pregnancy is averted. There are three components to this calculation: the percentage of pregnancies/births needing treatment; the percentage of those in need who receive the treatment; and the cost of the intervention. The radio buttons at the top of each table adjust the percentage of those in need of treatment and those who receive the treatment. When "Full Access" is selected, it is assumed that 100 percent of those in need of each treatment receive it. When "Actual Access" is selected, national or regional defaults for access to each intervention are read from the default database. Selecting "Full Access" will model a world where everyone who needs a specific treatment receives it, and will result in higher cost savings in the outputs. On the other hand, assuming "Actual Access," where only a fraction of individuals who need a specific treatment receive it, models the current state of the healthcare system and will result in lower cost saving in the outputs.



		of births requiring			Associated Costs for treatment of:		
Treatment	%	Comment	%	Comment	USD	Comment	
Delivery Care	100%	Assumption	59%	RG/OneHealth 2	7.51	Assumption	
Postpartum Care	100%	Assumption	12%	RG/OneHealth 2	0.79	Assumption	

## Set policy goals

There are three tabs in the Set Policy Goals section: the "Main Policy Goal," the "Method Mix," and the "FP Costs." These are inputs that are more closely or frequently aligned with FP policy goals.

On the first tab, enter the CPR, Unmet Need, and/or Future Budgets. The inputs on this page depend on which policy goal was selected from the radio buttons on the Configuration page. Under some configurations, only the first year value is needed; under other configurations, you will also have to make an assumption about the last year value. Assumptions about values in the last year are often based on stated policy goals.

On the second tab, enter the base year method mix, as well as the final year method mix for each scenario. The method mix for each year should add up to 100 percent.

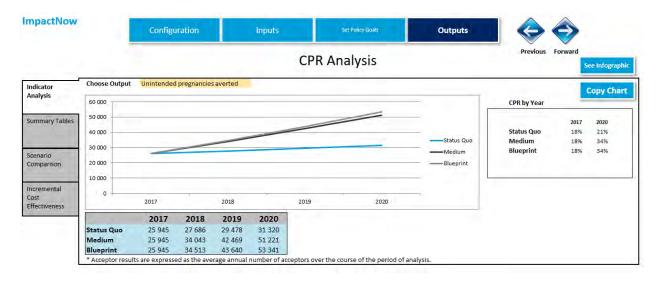
On the third tab, enter the annual FP cost per user for each method. Ideally, the cost per user would be comprehensive, including indirect costs and commodities. However, if you prefer, you may use commodity costs only. If only commodity costs are used make sure to clarify when presenting the results that FP costs do not represent the full programmatic costs.

## Outputs

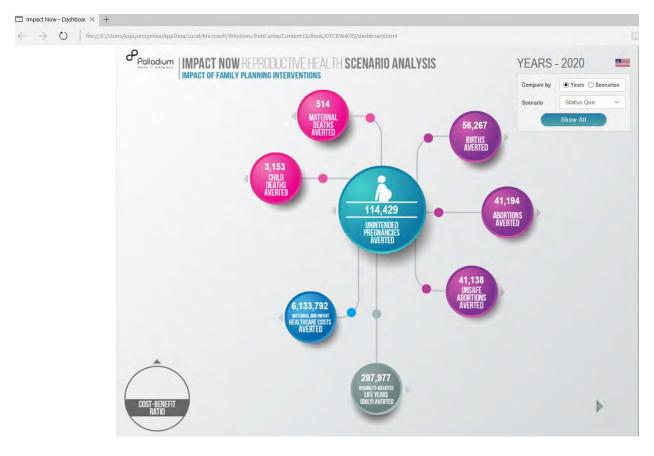
Once you have completed the Inputs and Set Policy Goals sections, the results will appear in the Outputs section. This section is divided into four tabs: "Indicator Analysis," "Summary Tables," "Scenario Comparison," and "Incremental Cost-Effectiveness Ratio."

#### Indicator Analysis

The first tab is "Indicator Analysis." You should select an indicator of interest from the yellow drop-down menu above the graph. The model will then graph the results for all three scenarios and display the annual values for each scenario in the table below. On the right side of the page is a box with the main policy goal, which serves as a reminder; this box cannot be edited. This tab allows you to quickly see the results of the outputs of greatest interest, both graphically and numerically, and to compare these results across the three scenarios.



Also on the right side of "Indicator Analysis," the user has the option to copy any of the charts displayed, which can be pasted into other documents. Above this option, the user can select to "See Infographic." When this button is selected, the user is taken to an ImpactNow infographic dashboard—this can be accessed in the absence of an internet connection and will not result in the model closing. Here, the user has the option to view three result types in infographic form, which can be selected using the grey arrow in the lower right side of the page: 1) the health and economic (cost-benefit ratio only) impacts of family planning; 2) the number of family planning users, by method; and 3) the number of family planning acceptors. The user has the option to compare results for each area by year and scenario. Using a toggle feature in the upper right side, the user can translate results to both English and Spanish.



#### Summary Tables

The second tab in the Outputs section is "Summary Tables." There is one table for each scenario; each table provides the annual values for all outputs. This tab displays all results in one location. This may be useful if you wish to copy and paste all of the results into a new Excel file for custom graphics or analysis.

#### Scenario Comparison

The third tab in the Outputs section is "Scenario Comparison." This table shows a quick comparison of the cumulative values of each output across the three scenarios. For each output (except the cost-benefit ratio), the values compared here are cumulative for the entire time period; that is, the sum of all annual values. (The cost-benefit ratio compared here is the average across all years.)

The first part of the table reports the cumulative values for each output. The second part of the table compares the second and third scenarios to the first, which is assumed to be a baseline scenario. The third part of the table states the comparison as a percentage of the first scenario value; this has the benefit of expressing the size of the difference in outputs relative to the absolute level of output.

This table presents the outputs in terms that may be useful for creating advocacy materials. Example statements that could be made based on the table below include, "By reaching our FP2020 commitment, we estimate that we would avert more than half a million unintended pregnancies," and "By shifting to LAPM, we estimate a 15 percent reduction in maternal deaths by 2020."

				Incrementa	l difference	Percentage	difference		
				compared to	Business as	compared to Business as			
Indicator	Business as Usual	LAPM scenario	FP2020 Commitment	LAPM scenario	FP2020 Commitment	LAPM scenario	FP2020 Commitment		
Unintended pregnancies averted	1,734,229	2,005,586	2,259,149	271,358	524,920	16%	26%		
Births averted	1,243,854	1,438,482	1,620,346	194,628	376,492	16%	26%		
Maternal deaths averted	3,161	3,626	4,064	466	903	15%	25%		

#### Incremental Cost-Effectiveness Ratio

The fourth tab in the Outputs section is the "Incremental Cost-Effectiveness Ratio." The second and third scenario outcomes and FP costs are compared with the FP costs and outcomes in the first scenario. The incremental costs are then divided by the incremental outcomes to arrive at the ICER. The ICER tells us the amount of additional funds that must be invested in family planning to achieve each additional unit of the selected outcome. Based on the example below, you could state, "We estimate that by switching to more LAPM use we could avert one unintended pregnancy for each US\$20 invested in family planning."

This tab analyzes one indicator at a time; you can select the indicator of interest from the yellow drop-down menu. The table shows the exact values, while the graph shows one point for each scenario. In this analysis, the first scenario serves as a baseline against which the second and third scenarios are compared.

Unintended pregnar	icie:	s averted						
Program	FP Costs		Outcomes	Incr	emental FP Costs	Difference in X outcome	ICER	
Business as Usual	\$	39,834,530	1,734,229					
LAPM scenario	\$	45,287,274	2,005,586	\$	5,452,744	271,358	\$	20
FP2020 Commitment	\$	50,740,018	2,259,149	\$	10,905,487	524,920	\$	21

## **METHODOLOGY**

#### Overview

The calculations in ImpactNow flow in a linear cascade, beginning with the number of users of each family planning method. The numbers of unintended pregnancies averted, and subsequent live births averted, are based on the number of users of each method. In turn, maternal and infant deaths averted are based on the number of live births averted; disability-adjusted life years (DALYs) averted are based on maternal and infant deaths averted.

The three different policy goal options (CPR, Unmet Need, and Future Budgets) entail different calculations to arrive at the number of FP users. However, the subsequent calculations are identical, regardless of which policy goal you select.

Costs of family planning are based on the number of users of each method. Costs averted are based on the average costs associated with a pregnancy and a live birth.

All outputs are calculated for each year of the analysis, using the projected number of users, method mix, and FP costs associated with that year. Each year is an independent calculation and does not depend on the results of the previous year. Where the inputs are only for the first and final year of a value, a constant linear scale-up for intermediate years is assumed.

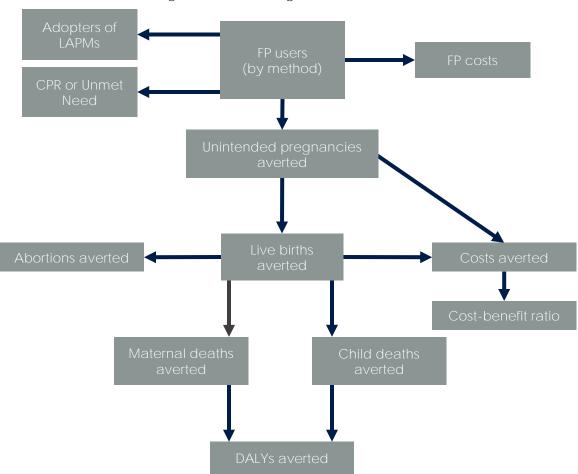


Figure 1: Methodological Framework

## Women of reproductive age at risk for unintended pregnancy

The first step is to understand how many women of reproductive age (WRA) are considered at risk for unintended pregnancies. If you select "All women of reproductive age" on the Configuration page, ImpactNow will apply the calculations to all women ages 15–49. If you select "Only women in union of reproductive age," the model will apply the percentage of women in union to the total number of women ages 15–49. Under this scenario, only those women will be considered at risk for unintended pregnancy. Note that the default method mix is dependent on which group of women is selected.

## Contraceptive prevalence rate

ImpactNow requires you to select one of three types of policy goal: increasing CPR, reducing Unmet Need, or increasing total Future Budgets. Depending on the national context and advocacy focus, select the most relevant option.

If you select a CPR policy goal, the annual CPR calculation is straightforward: ImpactNow does a linear interpolation between the base- and end-year contraceptive prevalence rates.

If you select an Unmet Need policy goal, ImpactNow first does a linear interpolation between the base-and end-year unmet need. Then, the model assumes that each percentage point decrease in unmet need is equivalent to a percentage point increase in CPR. For example, if the base-year CPR is 30 percent, the base-year unmet need is 20 percent, and the end-year unmet need is 15 percent, then ImpactNow would calculate the end-year CPR to be 35 percent. The five percentage point decrease in unmet need is assumed to be equivalent to a five percentage point increase in CPR.

If you select a Future Budgets goal, ImpactNow divides the number of users by the number of women at risk for unintended pregnancy to arrive at the CPR.

#### **CPR** = total FP users/women at risk of unintended pregnancy

CPR is only shown as a result when you select an Unmet Need or Future Budgets goal. When you select a CPR goal, the CPR is simply a linear interpolation between the inputs.

#### Unmet need

Unmet Need is assumed to have an inverse relationship with CPR; that is, for each percentage point increase in CPR, unmet need is assumed to decrease by one percentage point. For example, if the base-year unmet need is 27 percent, the base-year CPR is 35 percent and the end-year CPR is 39 percent, then ImpactNow would calculate the end-year unmet need to be 23 percent.

Under the CPR and Future Budgets goals, an unmet need level must be specified for the base year. ImpactNow then calculates future levels of unmet need as the inverse of the CPR calculations.

## Users of family planning

The next step is to calculate the number of users of each method. The equation is

Users<sub>Method</sub> x = women at risk for unintended pregnancy \* CPR \* method mix<sub>Method</sub> x

If you select a Future Budgets goal, ImpactNow takes a different approach to calculating the number of users of each method. Like the other two policy goals, ImpactNow assumes a linear interpolation of the total Future Budget between the base and end years. It first calculates the average cost per user as a weighted average of the method-specific cost per user, weighted by the method mix:

**Average cost-per-user** = 
$$\sum_{i=1}^{n} CostPerUser_{i} * MethodMix_{i}$$

The total Future Budget is then divided by the average cost per user. The product tells us how many FP users the FP program can afford, given the total budget and the average cost per user.

**Total FP users** = total Future Budget/average cost per user

All of the FP users are then distributed across the various methods according to the method mix:

UsersMethod  $x = \text{total } FP \text{ users } * \text{ method } mix_{Method } x$ 

## Acceptors of long-acting and permanent methods

ImpactNow estimates the annual number of acceptors (i.e., people who begin to use each type of LAPM each year). Because these methods last more than one year, the model must first make assumptions about how many users began LAPM use before the base year of the analysis, because they may continue use into your analysis period. Our estimate of acceptors is the difference between these continuers and the users of each method, which we have previously calculated.

Acceptors of LAPM are calculated based on LAPM users during the analysis period, as well as assumptions about acceptors of LAPM in past years. Two tables are used to calculate the acceptors of each LAPM. The first table is populated by hypothetical numbers which do not represent actual women, but are used to calibrate past cohorts of LAPM acceptors. The second table is scaled up so that the numbers in each cell represent actual women. Each LAPM has its own pair of tables, which go back as many years into the past as the years of method effectiveness of that particular method. For example, the table for a five-year intrauterine device (IUD) goes back in time five years before the start date of the analysis.

Each "dummy" table starts with the assumption that there was a linear scale-up in the number of acceptors of that method in past years. For example, for the five-year IUD, the model assumes that five years before the start date of our analysis, one hypothetical woman accepted the IUD; four years ago two hypothetical women accepted; three years ago, three accepted; and so forth. These hypothetical numbers

are then projected forward in time, using continuation rates. As you can see in the sample table below, the "Year of Analysis" is shown in columns and the "Year of Insertion" is shown in rows. This table corresponds to an analysis conducted with a base year of 2014 (the column outlined in bold) and an end year of 2020.

		Year of Analysis											
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	2009	0.94	0.82	0.71	0.62	0.54							
tion	2010		1.87	1.64	1.43	1.25	1.09						
Year of Insertion	2011			2.81	2.45	2.14	1.87	1.63					
ır of I	2012				3.75	3.27	2.86	2.49	2.18				
Yea	2013					4.68	4.09	3.57	3.12	2.72			
	2014						5.62	4.91	4.29	3.74	3.27		
SL	JМ						15.53						

The light grey cells on the diagonal are where the year of analysis and the year of insertion align; that is, they represent the starting cohorts of IUD acceptors in that year. These starting cohorts (in light grey, on the diagonal) are based on the assumption that the first cohort was one woman; the second was two; the third was three; etc. They have been discounted for half a year of discontinuation, under the assumption that IUD insertion happened throughout the year, but the cohort is counted on December 31. Tracing one row (for example, 2011) forward in time to the right, we see with each year/column there are fewer hypothetical women remaining in each cohort. Starting with the 2011 cohort, some hypothetical women have the IUD removed in 2012, more have it removed in 2013, and so on. The annual decline in each cohort is based on continuation rates used in MSI's Impact 2 model (Marie Stopes International, 2012). Because this IUD only lasts for five years, by 2016 there are no more hypothetical women from the 2011 cohort considered to be still using the IUD.

The purpose of the dummy table is to create artificial past acceptor cohorts for a specific LAPM to make projections about future numbers of acceptors. It is necessary to make assumptions about past use because LAPM use often carries forward from one year to the next. Therefore, to calculate the number of LAPM users who are new acceptors in any given year of the analysis, assumptions must be made about LAPM continuers.

Once the dummy table has been established, it can be scaled up to match numbers of real women using that LAPM. To do this, you should sum the total users in the dummy table in the base year of the analysis (in the example above, 2014), then divide the number of users of that LAPM (taken from the FP users calculation above) by the hypothetical users from the dummy LAPM table. In the example, there are 40,387 users of the five-year IUD. Therefore, the scale factor for the IUD is 17,447/15.53 = 1,123. That is, each person in the dummy table represents 1,123 IUD users. This scale factor is used to create the second table (where the numbers represent actual women) to project future numbers of acceptors.

			Year of Analysis										
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	2009	1,052	919	803	701	612							
	2010		2,105	1,838	1,605	1,402	1,224						
	2011			3,157	2,757	2,408	2,103	1,836					
	2012				4,210	3,676	3,210	2,804	2,448				
tion	2013					5,262	4,595	4,013	3,504	3,060			
of Insertion	2014						<mark>6,315</mark>	5,514	4,816	4,205	3,672		
rof	2015							3,365	2,753	2,404	2,099	1,833	
Year	2016								<mark>4,097</mark>	3,351	2,926	2,556	2,232
	2017									<mark>4,683</mark>	3,830	3,345	2,921
	2018										<mark>5,261</mark>	4,303	3,758
	2019											<mark>5,838</mark>	4,775
	2020												<mark>4,275</mark>

Table 2: Sample LAPM Acceptors Projection Table, Five-year IUD, 2014-2020 Analysis

The numbers in this table represent actual women using the IUD. The entire table is calibrated around the first year of analysis, outlined in bold (in this example, 2014). That is, the sum of all users in 2014 in this table (summing the values in the 2014 column) is equal to the sum of all users in 2014 taken from the FP users calculation above. To project future numbers of users, the continuer cohorts are first projected forward in their rows to the right, using annual continuation rates. Then, in years beyond the base year, the number of continuers in each year of analysis is summed and compared with the corresponding number of users from the previous calculation. The difference between the number of IUD users (using the methodology in the previous section) and the number of continuers is the calculated number of acceptors for that year (highlighted in yellow on the diagonal). Thus, the acceptors highlighted in yellow are calculated as the residual between the number of IUD users and the number of IUD continuers from past years. For example, the number of acceptors in 2017 is calculated using the following formula:

In turn, the continuers in 2017 are calculated as

$$acceptors_{2017} = users_{2017} - \sum_{2013}^{2016} continuers$$

In the 2017 example (shown in Table 2), ImpactNow first sums up the number of continuers from past cohorts from the 2017 column: 3,060 + 4,205 + 2,404 + 3,351 = 13,020. The model then compares the total number of continuers with the number of users it previously calculated. In this case, there are 17,703 users of the five-year IUD. ImpactNow then calculates the number of acceptors in 2017 as the difference between the number of users and the number of continuers: 17,703 - 13,020 = 4,683.

 $\Sigma_{2013}^{2016}$  continuers = acceptors<sub>2013</sub>\*4.5 year continuation rate + acceptors<sub>2014</sub>\*3.5 year continuation rate + acceptors<sub>2015</sub>\*2.5 year continuation rate + acceptors<sub>2016</sub>\*1.5 year continuation rate

Acceptors are calculated in this way for all LAPMs. Because the annual results are dependent on assumptions made about past acceptors of LAPMs, they are presented in the ImpactNow results as an average across all years. This reconciles any year-to-year fluctuations inherent in the calculations.

For sterilization calculations, ImpactNow also takes age into account. The method's permanence means that some users will be older than users of other methods. It also requires that the model account for survival and aging out of the reproductive years, rather than discontinuation. Each cohort of sterilization acceptors is assumed to start at the median age at sterilization. Each year the cohort moves forward, its members age one year, and the concomitant survival rates of women of that age are applied. Thus each cohort shrinks slightly each year due to mortality of some women in that cohort. Once the median cohort age reaches 50, the surviving cohort of sterilization users goes to zero in the calculations. For male sterilization, the median age at female sterilization is also used, with the assumption that it represents the age of the man's partner. This is done for two reasons: first, because the fecundity of women varies with age much more than for men; and second, because the median age of male sterilization may not be known.

## Pregnancies averted

Once the number of users by method is known, you can then calculate the unintended pregnancies averted. This calculation compares the failure rate of each method with the pregnancy rate of women with unmet need. (The method failure rate is the complement of the method effectiveness rate.) The latter serves as a counterfactual that estimates how many of these women might otherwise have had an unintended pregnancy in that year, in the absence of contraceptive use.

Unintended pregnancies averted<sub>Method X</sub> = users<sub>Method X</sub> \* (pregnancy rate of women with unmet need  $- (1 - \text{effectiveness}_{\text{Method X}}))$ 

The value of the pregnancy rate of women with unmet need is set to the rate of 41%. This value reflects new estimates produced by the Guttmacher Institute in the 2017 version of *Adding It Up* (Darroch et al., 2017). In earlier versions of ImpactNow, users were given the option of selecting one of three pregnancy rates for women with unmet need, estimated using data on pregnancy of non-users produced by the Guttmacher Institute's 2014 *Adding It Up*. The median value (31%) served as the default data input, while the 25th (23%) and 75th percentiles (38%) served as lower and upper threshold options. In light of this revision, users should exhibit care when comparing results across model versions.

In the case of LAPM, the calculations also account for the users' age. LAPM users, particularly sterilization users, may be older than users of short-term methods due to the long-term nature of the methods. The average age of users for each LAPM is calculated using the acceptors tables, which show the distribution of users by time since acceptance. A discount factor is then applied to the pregnancy rate of women with unmet need, according to the average age of the LAPM users in that year.

Table 3: Age-Specific Fertility Discount Factors

Age range	Fertility discount factor
15–19	1
20–24	1.5
25–29	1.3
30–34	1.1
35–39	1
40–44	0.6
45–49	0.1

Source: Weinberger et al., 2012

Unintended pregnancies averted are added across all methods. Subsequent calculations do not require any information about FP methods, but rather are calculated based on total unintended pregnancies averted.

#### Live births averted

In order to calculate live births averted, we account for all the possible outcomes per unintended pregnancy:

$$UP = LB + SB + A + M_a + M_b$$

**UP:** Unintended pregnancy

LB: Live birth

**SB:** Stillbirth. Because the stillbirth rate is standardly expressed in terms of stillbirths per 1,000 total births, a small adjustment is made to express the stillbirths in terms of all live births:

SB = stillbirth rate/(1,000-stillbirth rate)

A: Abortion

**M**<sub>a</sub>: Miscarriage that would have led to abortions. The model assumes that there are .07 miscarriages per abortion (Hammerslough, 1992).

**M**<sub>b</sub>: Miscarriages that would have led to births. The model assumes that there are 0.2 miscarriages per pregnancy that reaches 27 weeks (Hammerslough 1992).

We estimate the number of live births per unintended pregnancy by solving the following:

**LB per UP** = = 
$$\frac{(1-\% \ UP \ that \ end \ in \ A - (\% \ UP \ that \ end \ in \ A*Ma))}{(1+Mb+(\left(\frac{SB}{1000-SB}\right)*Mb)+\left(\frac{SB}{1000-SB}\right)}$$

To calculate the number of live births averted:

**Live births averted =** UP averted \* LB per UP

## Abortions averted (total and unsafe)

The outcome abortions averted is calculated by multiplying the percentage of unintended pregnancies ending in abortion by the number of unintended pregnancies averted:

**Abortions averted** = % unintended pregnancies ending in abortion \* unintended pregnancies averted

The number of unsafe abortions averted is calculated by multiplying abortions averted by the percentage of abortions that are unsafe:

**Unsafe abortions averted** = abortions averted \* % abortions that are unsafe

#### Maternal deaths averted

Estimates of maternal deaths averted due to FP use are based on an adjustment made to the maternal mortality ratio (MMR) to account for the specific risk of dying from an unintended, rather than average, pregnancy. This adjustment and the subsequent computation of maternal deaths averted is a three-step process:

**Step 1:** To compute unintended pregnancy-specific MMR, calculate the mortality risk associated with each live birth by accounting for the deaths associated with other pregnancy outcomes:

$$MMR = LB_m + SA_m + UA_m + SB_m + M_m$$

**LB**<sub>m</sub>: Live birth mortality, calculated.

**SA<sub>m</sub>:** Safe abortion mortality. The model assumes two deaths per 100,000 safe abortions.

UA<sub>m</sub>: Unsafe abortion mortality. Calculated as MMR \* Unsafe Abortion Mortality Ratio.

 $SB_m$ : Stillbirth mortality. Given limited evidence on stillbirth-associated mortality rates, the total MMR (unadjusted) is used as the mortality risk.

 $\mathbf{M_m}$ : Miscarriage mortality. Given limited evidence on miscarriage-associated mortality rates, the total MMR (unadjusted) is used as the mortality risk.

$$\begin{split} LB_m &= [\frac{MMR}{100,000}] - \left( \left(\frac{abortion\ ratio}{100}\right) * \left(1 - \%\ abortions\ that\ are\ unsafe\right) * \left(\frac{2}{100,000}\right) \right) \\ &+ \left( \left(\frac{abortion\ ratio}{100}\right) * \left(\%\ abortions\ that\ are\ unsafe\right) * \left(\frac{MMR}{100,000} * unsafe\ abortion\ to\ MMR\ ratio\right) \right) \\ &+ \left( \left(\frac{abortion\ ratio}{100}\right) * M_a * \left(\frac{MMR}{100,000}\right) \right) + \left( \left(1 + \left(\frac{SBR}{1000 - SBR}\right)\right) * M_b * \left(\frac{MMR}{100,000}\right) \right) \\ &+ \left( \left(\frac{SBR}{1000 - SBR}\right) * \left(\frac{MMR}{100,000}\right) \right) \end{split}$$

Where:

 $M_a$  = Miscarriage that would have led to abortions. The model assumes that there are .07 miscarriages per abortion (Hammerslough 1992).

 $M_b$ = Miscarriages that would have led to births. The model assumes that there are 0.2 miscarriages per pregnancy that reaches 27 weeks (Hammerslough, 1992).

SBR = Stillbirth rate

**Step 2:** Combine the mortality risks of each unintended pregnancy outcome to calculate maternal deaths per unintended pregnancy:

$$\begin{split} & \textbf{Maternal deaths per unintended pregnancy} = (LB_m*LB~per~UP) + \\ & (\%~UP~that~end~in~A*\%~abortions~that~are~unsafe * \frac{MMR}{100,000}*unsafe~abortion~to~MMR~ratio) + \\ & (\%~UP~that~end~in~A*(1-\%~of~abortions~that~are~unsafe) * (\frac{2}{100,000})) + \\ & (\%~UP~that~end~in~A*M_a* \frac{MMR}{100,000}) + \\ & (\left(LB~per~UP + \left(\left(\frac{SBR}{1000 - SBR}\right)*LB~per~UP\right) * M_b* \frac{MMR}{100,000}\right)) + \\ & (\left(\left(\frac{SBR}{1000} - SBR\right)\right)*LB~per~UP) * \frac{MMR}{100,000} \end{split}$$

Where:

LB<sub>m</sub>= Live birth mortality (calculated above).

LB per UP = Live births per unintended pregnancy (calculated above).

% UP that end in A= Percentage of unintended pregnancies that end in abortion (user input).

 $M_a$  = Miscarriage that would have led to abortions. The model assumes that there are .07 miscarriages per abortion (Hammerslough, 1992).

SBR = Stillbirth rate

 $M_b$  = Miscarriages that would have led to births. The model assumes that there are 0.2 miscarriages per pregnancy that reaches 27 weeks (Hammerslough, 1992).

**Step 3:** Calculate the maternal deaths averted:

**Maternal deaths averted** = Unintended pregnancies averted \* maternal deaths per unintended pregnancy

#### Child deaths averted

Child deaths averted are based on the concept that longer spacing between births results in lower child mortality. Previous birth interval (PBI) coefficients were estimated for each country (Weinberger et al., 2012). The PBI coefficient represents the number of child deaths estimated to be averted for each live birth averted. Thus, the total number of child deaths averted is calculated as follows:

Child deaths averted Country X = live births averted Country X \* PBI coefficient Country X

#### DALYs averted

Disability-adjusted life years are metrics that estimate years of healthy life lost due to a specific health issue. Calculations of DALYs averted due to various health interventions provide one way to compare different types of interventions across different health issues. A DALY is the sum of two components: YLL (years of life lost) and YLD (years lost to disability). YLL for a specific condition are those years lost due to premature mortality. YLD are a fraction of those years lived with a disability due to a specific condition. In ImpactNow, DALYs are averted in two different health areas: maternal health and child health.

For maternal health

**DALYs averted** = YLL averted + YLD averted

**DALYs averted** = (maternal deaths averted \* YLL per maternal death averted) + (maternal deaths averted \* YLL per maternal death averted) \* DALY ratio (YLD/YLL) all maternal conditions

For child health

**DALYs averted** = child deaths averted \* YLL per child death averted

ImpactNow reports the total DALYs averted, summing the child and maternal DALYs averted:

**Total DALYs averted** = maternal DALYs averted + child DALYs averted

Region-specific values for YLL per maternal death averted, DALY ratio for all maternal conditions, and YLL per child death are taken from the 2010 Global Burden of Disease report (IHME, 2013).

## Family planning costs

Total costs invested in family planning are based on the number of users of each method, and the annual cost of each method:

$$extbf{\textit{Total FP costs}} = \sum_{i=1}^{n} ext{users of method}_i * ext{annual cost} - ext{per} - ext{user of method}_i$$

FP costs are only displayed as an output when you select either a CPR or Unmet Need goal.

#### Healthcare costs averted

Healthcare costs averted are those normally incurred in the course of pregnancy, childbirth, and some basic neonatal costs. First, the model calculates average costs per pregnancy and per live birth.

If you select "Full Access" on the Inputs page, then the average cost calculations assume that all women/births needing each intervention will receive it. In this case

## average cost per pregnancy

$$= \sum_{i=1}^{n} \% \ of \ women \ in \ need_{Intervention \ i} * Cost \ of \ treatment_{Intervention \ i}$$

#### average cost per live birth

$$= \sum_{i=1}^{n} \% \text{ of births in } need_{Intervention i} * Cost \text{ of treatment}_{Intervention i}$$

If you select "Actual Access" on the Inputs page, then the average cost calculations assume that only the current fraction of women/births that actually receive that intervention will receive it in the case of unintended pregnancies averted. In this case

#### average cost per pregnancy

$$= \sum_{i=1}^{n} \% of women in need_{Intervention i}$$

 $= \sum_{i=1}^{\infty} \% \text{ of women in need}_{Intervention i}$   $* \% \text{ of women in need who receive}_{Intervention i} \text{ Cost of treatment}_{Intervention i}$ 

## average cost per live birth

$$= \sum_{i=1}^{n} \% \text{ of births in need}_{Intervention i}$$

\* % of births in need who receive<sub>Intervention i</sub> Cost of treatment<sub>Intervention i</sub>

Total healthcare costs averted are always a sum of the pregnancy costs averted and the birth costs averted.

#### Cost-benefit ratio

The cost-benefit ratio expresses the costs saved for every cost invested in FP.

**Cost-benefit ratio** = total healthcare costs averted/total FP costs

**Total healthcare costs averted** = unintended pregnancies averted \* average cost per pregnancy + live births averted \* average cost per birth

#### Incremental cost-effectiveness ratio

The incremental cost-effectiveness ratio is a way of expressing how much more money would have to be invested to receive more of a specific output. The ICER calculation always compares one of the two policy scenarios with the base scenario. For the ICER calculation, you must first choose the output in which you are interested.

For example, you may be interested in maternal health and want to know how much more money must be invested in family planning to prevent one more maternal death. In this case, the ICER would compare the investments in family planning in the base and policy scenarios, and also compare the maternal deaths averted in the base and policy scenarios. The formula is

ICERoutcome x = (FP costs in policy scenario - FP costs in base scenario) / (outcome X in policy scenario - outcome X in base scenario)

For example, if the base scenario costs US\$259 million and averts 34,114 maternal deaths, while the policy scenario costs US\$278 million and averts 36,673 maternal deaths, then the ICER would be

ICER<sub>maternal deaths averted</sub> = (\$278,000,000-\$259,000,000)/(36,673-34,114)= \$7,425 per maternal death averted.

That is, each incremental US\$7,425 invested in family planning averts one more maternal death.

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## **EXERCISE 1: GETTING STARTED**

#### Introduction

ImpactNow is an Excel-based model that estimates the health and economic impacts of family planning in the near term. It is designed to model the impacts of different policy scenarios and estimate the answers to many "what if" questions about policy options. For example, you may want to know answers to questions such as, "What are the reproductive health impacts of reaching our FP2020 commitment?"

To become familiar with the tool, you will complete practice exercises which look at the estimated impact of different contraceptive prevalence rate (CPR) goals. ImpactNow allows analysts to look at three CPR goals simultaneously and produces the estimated health outcomes and economic impact associated with these goals. It should be noted, however, that estimates produced by these exercises are for training only.

The ImpactNow tool is populated by a database of default data, including demographics, incidence/prevalence rates, and international cost estimates for some reproductive health services. In general, you should review the default data and make changes as you see fit. For this training, examples use default data and hypothetical policy goals. The policy goals used in the training exercises should therefore not be considered "real" policy goals.

## Saving and configuring

Objective: At the end of the exercise, you will be able to

- Save a new version of the ImpactNow tool to your computer
- Enable macros in the tool
- Configure ImpactNow to your region, population, and type of policy goal of interest

## Task 1.1: Begin by double-clicking on the tool

You will see the Welcome screen below, which denotes the version of ImpactNow you are using.

# ImpactNow







Version 2.0 - revised September 2018

About

ImpactNow was created by the Health Policy Project (HPP), with support from USAID. It is available at no cost for use by anyone. All uses of ImpactNow should credit HPP, USAID, and Marie Stopes International as the source of the model, using the citation below. HPP does not verify the results of applications performed independently, and results should be presented as estimates.

In 2018, the USAID-funded Health Policy Plus (HP+) project updated the data and added an option for youth only. HP+ kindly requests that individuals, institutions, and programs using the model inform Palladium of such use so that we better understand its reach and impact by contacting policyinfo@thepalladiumgroup.com. Users are also welcome to submit comments and suggestions to improve the model to the same address.

Suggested citation: Health Policy Project, United States Agency for International Development (USAID), and Marie Stopes International. 2014. ImpactNow Model, version 2.0, revised September 2018. Washington, DC: Palladium, Health Policy Project.

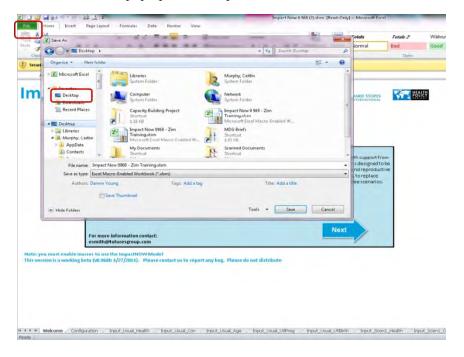
For more information contact: policyinfo@thepalladiumgroup.com

Note: You must enable macros to use the ImpactNow Model Please contact us to report any bug.

# Task 1.2: Save and name a new version of ImpactNow, identifying it as a practice file.

You will want to name and save each new file you run with ImpactNow. This will help you pull up previous files.

- Click "File" → "Save As."
- The Save As box will pop up, as in the picture below.

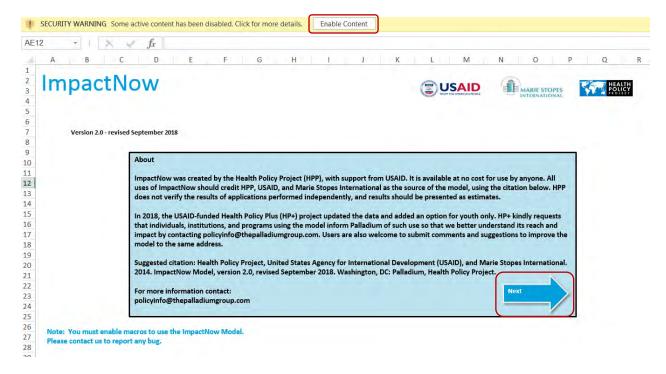


• Save this file to your desktop or another folder as "ImpactNow - Zim Training."

## Task 1.3: Enable macros to start using tool

To use ImpactNow, you will need to enable macros in Excel. Otherwise, you will not be able to move forward to the next screen.

- You can enable macros by finding the yellow toolbar along the top of the screen.
- Click the "Enable Content" button within this toolbar.
- Click "Next."



## Task 1.4: Choosing the country and range of years

You are now in the Configuration page of the tool. Before running your estimate, you will need to select which country or region you are interested in exploring.

• From the "Country" dropdown menu, select "Kenya."

Next, you will need to select the range of years you are interested in observing. The "Start Year" serves as your baseline year, and "End Year" serves as the year for which your estimates will be calculated.

- For the Start Year, select 2014.
- For the End Year, select 2020.

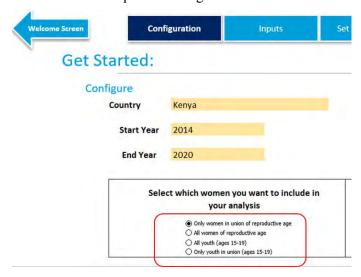


Task 1.5: Choosing the population of interest

Next, you will need to choose which range of women you would like to include in your analysis. You can choose "All women of reproductive age"; "Only women in union of reproductive age" (women of reproductive age are defined as women ages 15–49); "All youth (ages 15–19)"; and "Only youth in union (ages 15–19)."

The group you choose will constitute the population for which you are interested in observing FP benefits. Generally, it is advised that you choose the population that aligns with your country's national FP priorities. This exercise will only look at married women of reproductive age.

• Select "Only women in union of reproductive age."



## Task 1.6: Choosing the type of policy goal

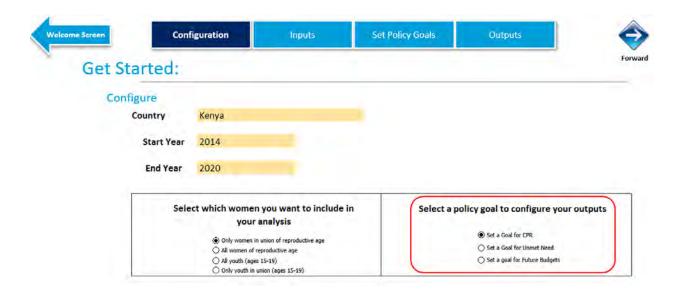
One of the key steps during configuration is selecting a type of policy goal. While you will enter a numeric goal later in the process, it is important to decide which type of policy you are interested in exploring at this step.

There are three policy types from which to choose:

- 1. Set a Goal for CPR: This type of policy goal will model the impact of increasing the percentage of women of reproductive age who use family planning.
- 2. Set a Goal for Unmet Need: This type of policy goal will model the impact of decreasing unmet need for family planning.
- 3. Set a Goal for Future Budgets: This type of policy goal will model the impact of increasing or decreasing FP budgets.

For the purposes of this exercise, we will choose to look at the CPR.

• Select "Set a Goal for CPR."



• Save the file by clicking "File"  $\rightarrow$  "Save" (at the top left of the page).

#### **EXERCISE 2: MODIFYING INPUTS**

## Modifying select inputs from their default setting

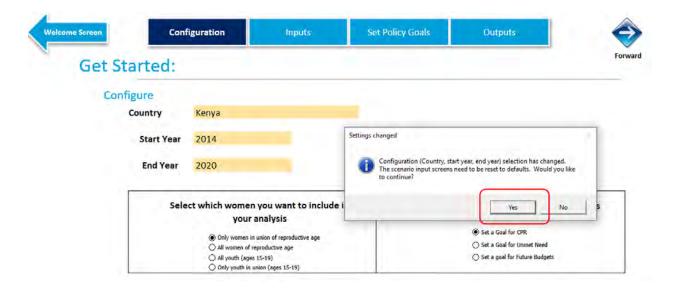
Objective: At the end of the exercise, you will be able to

- Access the Inputs page
- Review the input data in each input tab
- Modify select input data

#### Task 2.1: Navigate to the Inputs page

When your configurations are complete, you may move forward to the Inputs page.

- Click the "Forward" button at the top right portion of the screen to move into the Inputs page. Alternatively, you can click directly on the "Inputs" button in the navigation header.
- After clicking on one of these two buttons, a dialog box will appear. This box will appear every
  time you alter the tool's configuration, and will alert you that all inputs are restored to their
  default settings after a configuration change.
- Click "Yes" to continue.



## Task 2.2: Reviewing the input tabs

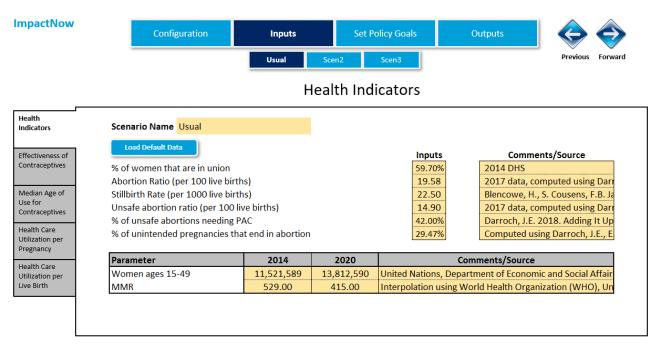
You should now see the Inputs page captured below. As mentioned previously, this page is populated by default data from ImpactNow's database.

The first tab of inputs displayed, "Health Indicators," includes several health indicators such as abortion rates, population, and maternal mortality rate. The source of each input is noted to the right of the input value.

You can navigate through other input categories by clicking through the tabs on the left side of the screen:

- Health Indicators
- Effectiveness of Contraceptives
- Median Age of Use for Contraceptives
- Health Care Utilization per Pregnancy
- Health Care Utilization per Live Birth

If you navigate back to the first input tab, "Health Indicators," you will note that there is a button labeled "Load Default Data." This button restores the default data for the country you selected on the Configuration page. This button is helpful if you have altered inputs, but would like to re-populate the page with default data.



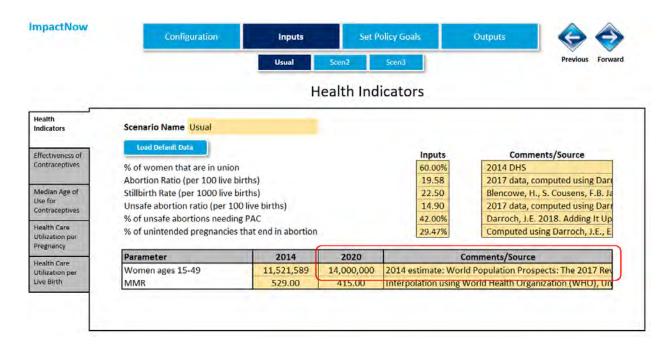
## Task 2.3: Modifying inputs

ImpactNow can be used without any input modification. However, it is considered a best practice to check the default data against your local data sources, such as your local census or statistical agency, the Ministry of Health, and recent health surveys. Alternatively, you may have a data source you prefer to use over the default source.

This exercise walks through modifying two sample inputs.

#### Sample A: Modifying "Women ages 15-49"

- Navigate to the "Health Indicators" input tab.
- Note that the number of women of reproductive age is 11,521,589 in 2014 and 13,812, 590 in 2020—a projection created by the United Nations. You can choose to update this data if you have a preferred or updated data source or assumption.
- In this case, let's assume that the Government of Kenya produced its own population projections, and this is the preferred source for the women of reproductive age estimate for 2020.
- Edit the Comment/Source box to read: "2014 estimate: World Population Prospects: The 2017 Revision; 2020 projection: Government of Kenya, 2018."
- Next, change the 2020 value to "14,000,000."



#### Sample B: Modifying percentage who received antenatal care

- Navigate to the "Health Care Utilization per Pregnancy" input tab.
- Note that the first column of the table shows the percentage of pregnant women who need a specific health service, and that the second column shows the percentage of pregnant women in need who actually receive the service.
- Note that the percentage of women who receive antenatal care (ANC) is 44 percent, as per the 2017 *Adding It Up* report (Darroch et al., 2017).
- Hypothetically, you may know of a more recent source of ANC data, which cites the care received at 52 percent. You can update this input to reflect the more recent data.
- Type the new source into the Comments/Source box (for the purpose of this exercise, you may type "New data").
- Type "52%" into the Input box.

recieve ANC)

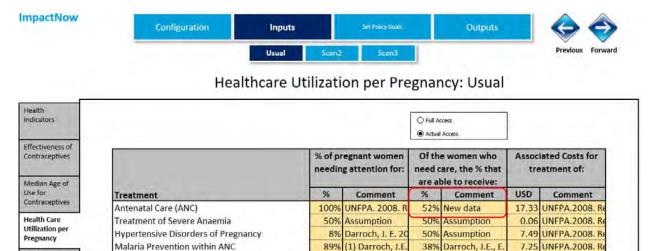
Urinary Tract Infection (UTI)

Malaria Treatment within ANC (0 if all women

Health Care

Live Birth

Utilization per



(1) Darroch, J.E.

25% Darroch, J. E. 20

48% Darroch, J.E., E

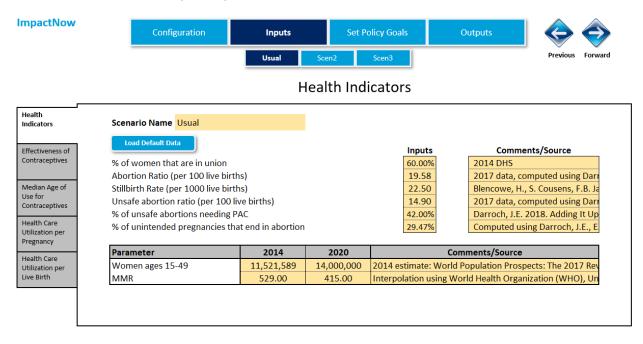
50% Assumption

22.33 UNFPA.2008. Re 0.70 UNFPA.2008. Re

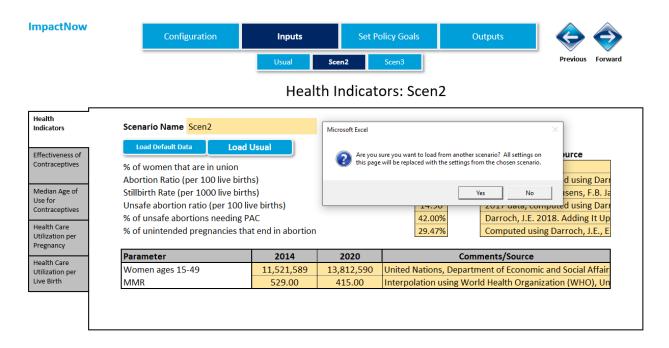
## Task 2.4: Applying input modifications to each policy scenario

A significant strength of the ImpactNow tool is its ability to observe the impact of multiple policy goals simultaneously. As such, you will need to apply the input changes you made to each policy scenario. This is a very important step, since you want to compare three scenarios that have identical percentages of women in union and ANC coverage inputs, but different CPR goals. (CPR policy goals will be entered in the next exercise.)

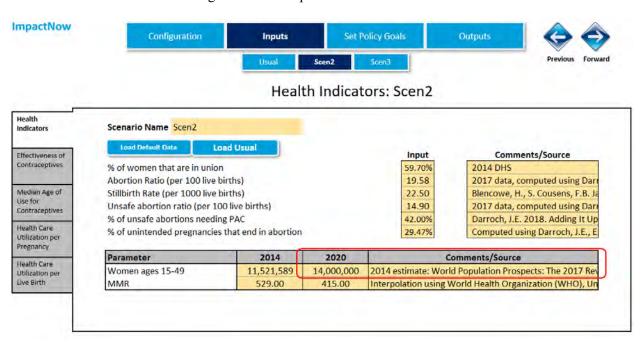
- Navigate to the "Health Indicators" tab of the Inputs page.
- Note the three scenario tabs below the navigation header: "Usual," "Scen2," and "Scen3." Click through each tab to observe what they look like.
- You will also see a yellow bar below these tabs, located next to Scenario Name. This box allows you to rename the policy scenario in each tab.
- A best practice is to provide a descriptive name for each of the three policy scenarios, such as Base Case, Moderate CPR, and High CPR. For the purposes of this exercise, we will keep the default names of Usual, Scen2, and Scen3.



• Click on "Scen2" and find the "Load Usual" button. After clicking this button, a dialog box will appear. This box will alert you that all Scen2 inputs will now be updated to mirror the Usual scenario inputs.

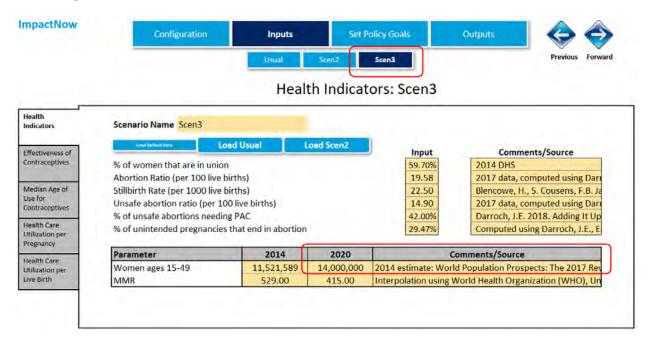


• Your Scen2 inputs should now look like the image below, with the number of women ages 15–19 in 2020 now showing 14,000,000. You may click on the "Health Care Utilization per Pregnancy" tab to see that the ANC figure has been updated as well.



• Next, click on "Scen3" and then click on either the "Load Usual" or "Load Scen2" button. These buttons provide you with the ability to load inputs from either of the first two scenarios. Since both scenarios now have the same inputs, you may select either button.

• Again, a dialog box will appear to alert you that all Scen3 inputs will be updated to mirror the inputs of either the Usual or Scen2 scenario.



- At the end of this exercise, Usual, Scen2, and Scen3 should reflect the same inputs.
- Save the file by clicking "File" → "Save."

## **EXERCISE 3: SETTING POLICY GOALS**

# Objectives

The purpose of this exercise is to practice entering baseline data as well as inputs into three different policy scenarios:

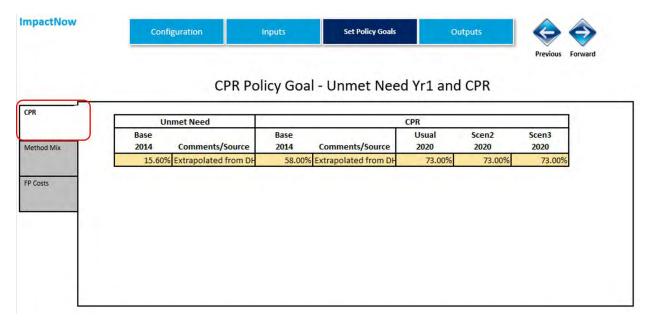
- "Usual" scenario, which serves as a baseline against which the second and third scenarios are compared and represents a policy scenario of no additional increases in contraceptive use over current levels
- Scenario 2 ("Scen2"), representing an ambitious contraceptive use policy goal and visible increases in contraceptive use compared to the Usual scenario
- Scenario 3 ("Scen3"), representing the most ambitious contraceptive use policy goal and therefore the largest increases in contraceptive use over time

# Task 3.1: Navigating to the "Set Policy Goals" pages

• Navigate away from the "Inputs" pages of ImpactNow by clicking Set Policy Goals in the navigation bar at the top of the "Configuration" page.



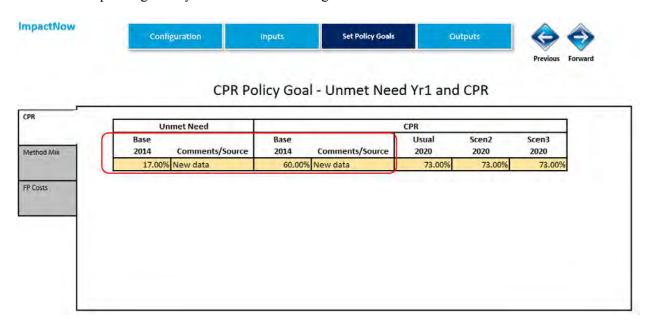
• You will see three pages in the Set Policy Goals section: 1) the main contraceptive prevalence rate (CPR) policy goal; 2) the method mix goal; and 3) FP costs. Ensure that you have navigated to the first page by clicking "CPR."



## Task 3.2: Entering new baseline figures

On the first tab in the Set Policy Goals section, you will see seven yellow input fields: five for data and two for base year sources. The first two fields correspond to unmet need in the base year.

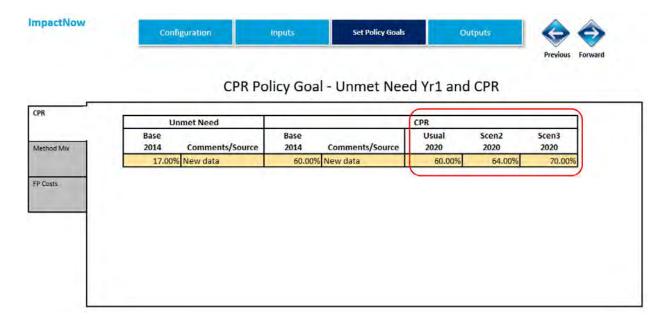
- Adjust the baseline unmet need estimate by entering "17" in the 2014 yellow field corresponding to Unmet Need Base. Change the source information to "New data."
- Next, adjust the base-year contraceptive prevalence estimate by entering "60" in the corresponding 2014 yellow data field. Change the source information to "New data."



## Task 3.3: Entering inputs into the main CPR policy goal

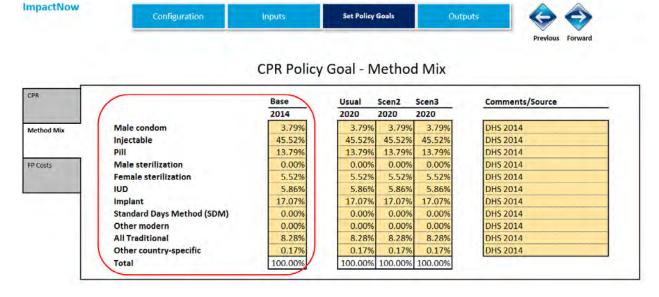
The data inputs for the three policy scenarios—Usual, Scen2, and Scen3—are found next to the baseline input fields on the first tab of the Set Policy Goals section.

- First, set a CPR policy goal for Usual, representing a policy scenario of no additional increases in contraceptive use from the base year, by entering "60" in the corresponding yellow data field.
- Set an ambitious contraceptive use policy goal for Scen2 by entering "64" in the corresponding 2020 yellow data field.
- Finally, set the most ambitious contraceptive use policy goal for Scen3 by entering "70" in the corresponding 2020 yellow data field.

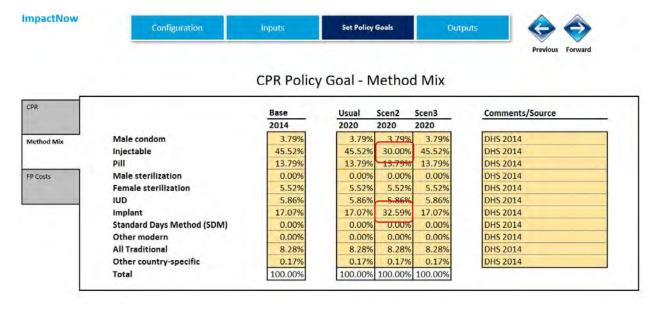


# Task 3.4: Entering inputs into the "Method Mix" policy goal

- Navigate away from the first tab of the Set Policy Goals section by clicking "Method Mix." By doing this, you will see the method mix for the baseline year ("Base") as well as the three policy scenarios (Usual, Scen2, and Scen3).
- Ensure the following distribution of contraceptive users by method in the Base case and corresponding yellow fields:
  - o Male condom: 3.79%
  - o Injectable: 45.52%
  - o Pill: 13.79%
  - o Male sterilization: 0%
  - o Female sterilization: 5.52%
  - o IUD: 5.86%
  - o Implant: 17.07%
  - o Standard Days Method: 0%
  - o Other modern: 0%
  - o All traditional: 8.28%
  - o Other country-specific: 0.17%
- The method mix should add up to 100 percent.



- For the Usual scenario, representing no additional increases in contraceptive use over the Base case, assume no changes to the method mix from the 2014 baseline. Replace all the data inputs with figures identical to the 2014 Base method mix as noted above. Ensure that the method mix adds up to 100 percent.
- For Scen2, the scenario representing an *ambitious* contraceptive use policy goal, replace all the data inputs with figures identical to the 2014 Base and Usual scenario method mix, except Injectable and Implant. For Injectable, replace the existing value with "30.0." For Implant, change the data input to "32.59." Ensure that the method mix adds up to 100 percent.



- For Scen3, the scenario representing the most ambitious contraceptive use policy goal, broaden the method mix, entering the following distribution of contraceptive users by method:
  - o Male condom: 3.79%
  - o Injectable: 25%
  - o Pill: 5%

Male sterilization: 2%Female sterilization: 5.52%

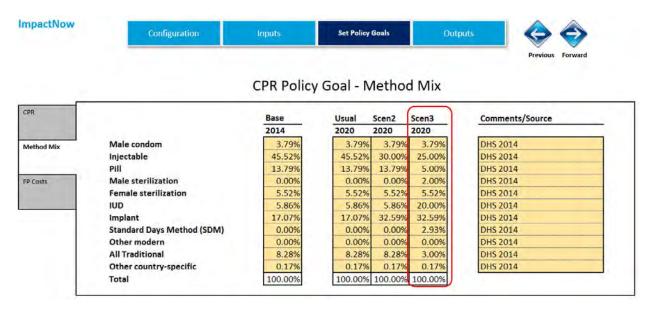
IUD: 20%Implant: 32.59%

o Standard Days Method: 2.93%

Other modern: 0%All traditional: 3.0%

o Other country-specific: 0.17%

• Ensure that the method mix adds up to 100 percent.

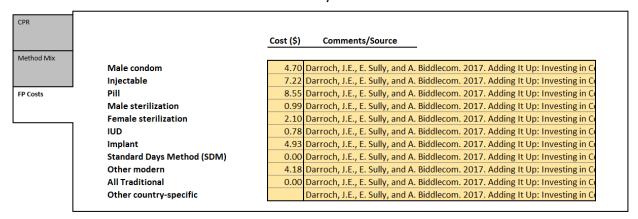


Task 3.4: Navigating to page three of the Set Policy Goals section

- In order to view the last set of policy inputs, navigate away from the second tab of the Set Policy Goals section by clicking "FP Costs." By doing this, you will see the annual FP cost per user for each method of contraception. Do not change the default figures.
- Save the file by clicking "File" → "Save"



#### CPR Policy Goal - FP Costs



#### **EXERCISE 4: IMPACTNOW OUTPUT ANALYSIS**

# Objectives

The purpose of this exercise is to practice navigating to, selecting, managing, and interpreting the range of ImpactNow results in the Outputs section. Specifically, the user will learn how to

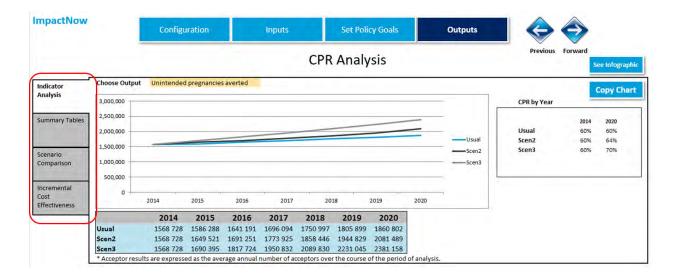
- Navigate throughout the Outputs section
- Select and display annual output values for indicators of interest both numerically and graphically by scenario, including "Unsafe Abortions Averted," "Maternal and infant health care costs averted," "Unintended pregnancies averted," and "Infant deaths averted"
- Display and compare in-depth annual output summary tables by scenario
- Display in-depth comparison tables, which evaluate cumulative rather than annual values of each indicator output across the three scenarios
- Interpret the incremental cost-effectiveness ratio for select indicators

#### Task 4.1: Navigating to the Outputs pages

• Navigate away from the Set Policy Goals section by clicking "Outputs" in the navigation bar.



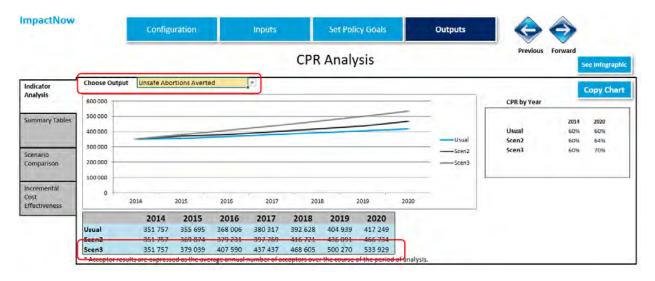
• You will see four pages in the Outputs section: 1) "Indicator Analysis," 2) "Summary Tables," 3) "Scenario Comparison," and 4) "Incremental Cost Effectiveness." Ensure that you have navigated to the first tab by clicking "Indicator Analysis."



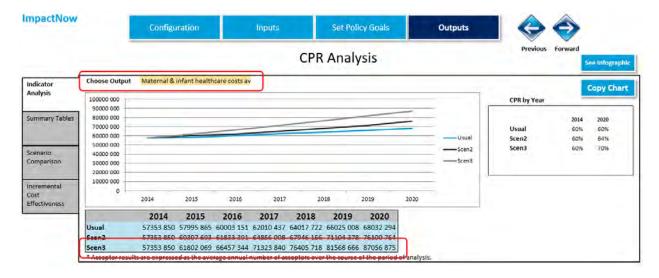
## Task 4.2: Selecting, viewing, and interpreting output indicators of interest

Once you have navigated to the "Indicator Analysis" tab, you can select an indicator of interest from the yellow drop-down menu above the graph. The results for all three policy scenarios—Usual, Scen2, and Scen3—are then graphed, and annual values for each scenario are displayed in the table format. Each scenario represents varied levels of ambition related to FP policy and maternal health.

• In the yellow drop-down menu titled, Choose Output, select the indicator "Unsafe Abortions Averted." This allows you to view the number of abortions averted annually by policy scenario. The graph and corresponding table show that Scen3, the most ambitious contraceptive use policy goal, averts the most unsafe abortions annually compared to the other policy scenarios.

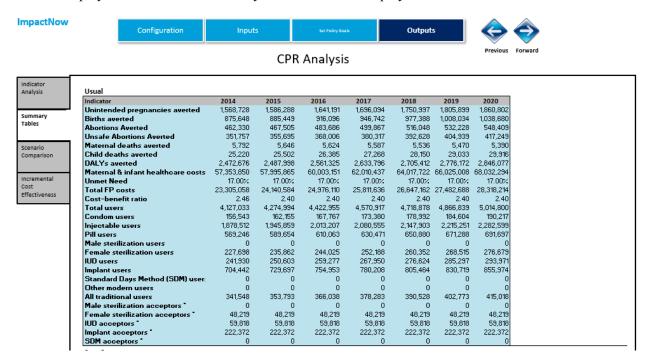


• To view another output indicator, select "Maternal & infant health care costs averted" from the yellow drop-down menu. The graph and corresponding table show that Scen3, the most ambitious contraceptive use policy goal, generates the most annual savings across development sectors compared the Usual scenario and Scen2.

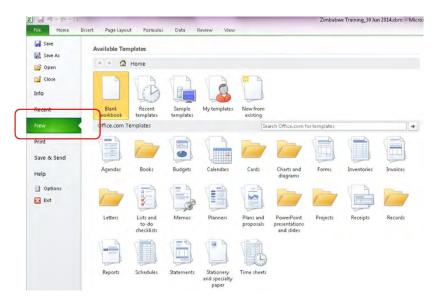


# Task 4.3: Viewing and copying/pasting summary table results

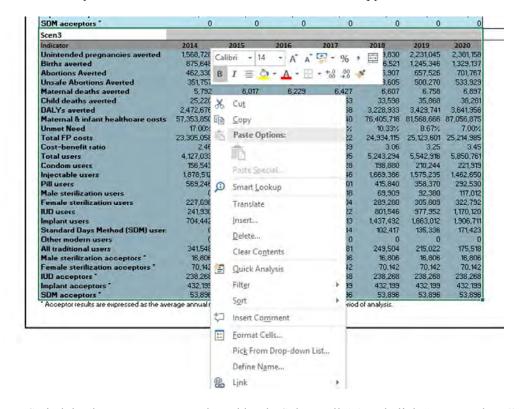
• Navigate to the second tab of the Outputs section by clicking "Summary Tables." You will see one table for each scenario; each table provides the annual values for all outputs previously displayed on the "Indicator Analysis" tab. This tab displays all results in one location.



• To conduct your own data analysis with these tables in a separate file, open a new blank workbook in Excel.

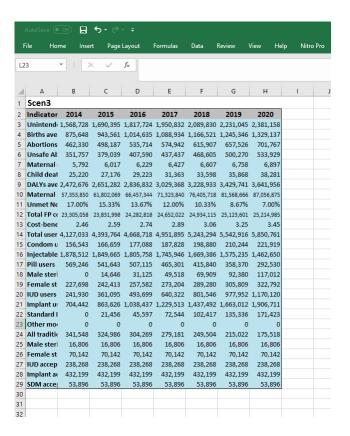


• After opening the new workbook, switch back to the ImpactNow file, scrolling to Scen3 on the "Summary Tables" tab. Select the full table and click "Copy."



Switch back to your new Excel workbook. Select cell A1 and click "Paste Values."

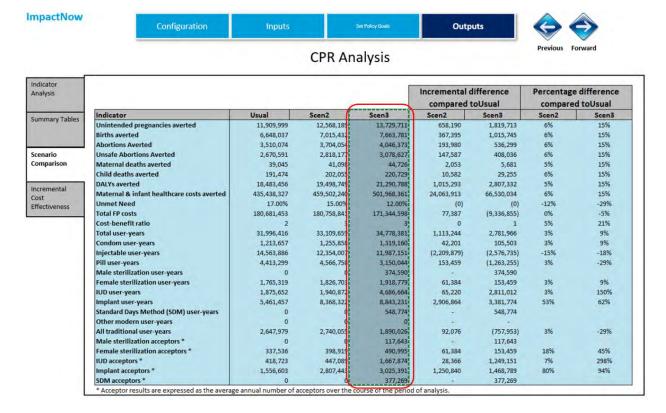
• Once your data are pasted, you can use Excel to create your own column, line, pie, bar, area, and other charts. You can also conduct additional analysis using your preferred Excel tools and functions. Keep this file open for a forthcoming task.



Task 4.4: Viewing and copying/pasting scenario comparison tables

- From the "Summary Tables" tab, navigate to "Scenario Comparison." This tab displays a table, which provides a comparison of the cumulative rather than annual values of each indicator output across the three scenarios.<sup>2</sup>
- View the first three columns of the table, which report the cumulative values for each output. Select the column marked Scen3 and click "Copy."

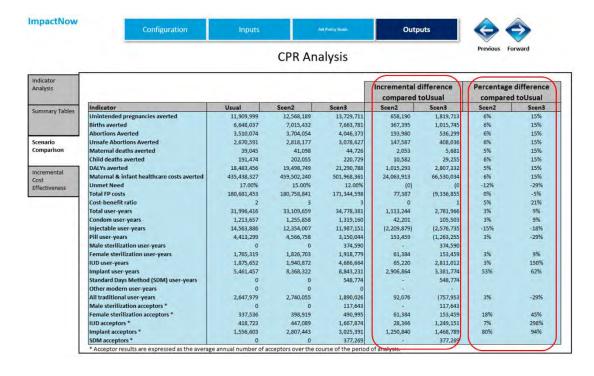
<sup>&</sup>lt;sup>2</sup> For each output (except the cost-benefit ratio), the values compared here are the cumulative values for the entire time period; that is, the sum of all the annual values. The cost-benefit ratio compared here is the average across all years.



- Switch back to your new Excel workbook and complete the following steps:
  - o Select cell J3 and click "Paste Values." Now the Scen3 annual and cumulative values are both on one sheet.
  - o In cell J1, type "Cumulative Values Scen3" to name the column.
  - o In cell J2, type "2014-2020"
  - o In cell K1, type "Cumulative Values Check."
  - In cell K3, enter the formula "=sum(B3:H3)" and hit enter. Compare whether this value matches the value in J2.

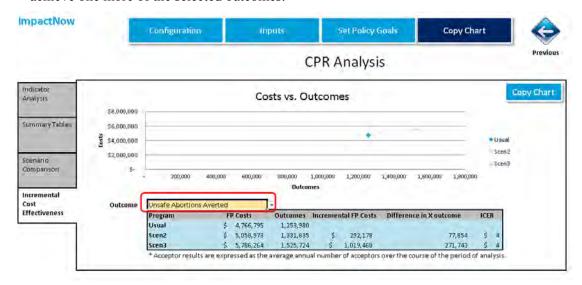
Cumulative Values Check	Cumulative Values Scen 3							Scen3		
	2014-2020	2020	2019	2018	2017	2016	2015	2014	Indicator	
13,729,711.44	13,729,711.44	2,381,158	2,231,045	2,089,830	1,950,832	1,817,724	1,690,395	1,568,728	Unintend	
7,663,781.30	7,663,781.30	1,329,137	1,245,346	1,166,521	1,088,934	1,014,635	943,561	875,648	Births ave	
4,046,373.46	4,046,373.46	701,767	657,526	615,907	574,942	535,714	498,187	462,330	Abortions	
3,078,626.83	3,078,626.83	533,929	500,270	468,605	437,437	407,590	379,039	351,757	Unsafe At	
44,726.41	44,726.41	6,897	6,758	6,607	6,427	6,229	6,017	5,792	Maternal	
220,728.55	220,728.55	38,281	35,868	33,598	31,363	29,223	27,176	25,220	Child deat	
21,290,787.94	21,290,787.94	3,641,956	3,429,741	3,228,933	3,029,368	2,836,832	2,651,282	2,472,676	DALYs ave	
501,968,360.64	501,968,360.64	87,056,875	81,568,666	76,405,718	71,323,840	66,457,344	61,802,069	57,353,850	Maternal	
0.84	0.12	7.00%	8.67%	10.33%	12.00%	13.67%	15.33%	17.00%	Unmet Ne	
171,344,598.45	171,344,598.45	25,214,985	25,123,601	24,934,115	24,652,022	24,282,818	23,831,998	23,305,058	Total FP co	
20.45	2.92	3.45	3.25	3.06	2.89	2.74	2.59	2.46	Cost-bene	
34,778,381.44	34,778,381.44	5,850,761	5,542,916	5,243,294	4,951,895	4,668,718	4,393,764	4,127,033	Total user	
1,319,160.39	1,319,160.39	221,919	210,244	198,880	187,828	177,088	166,659	156,543	Condom u	
11,987,151.13	11,987,151.13	1,462,650	1,575,235	1,669,386	1,745,946	1,805,758	1,849,665	1,878,512	Injectable	
3,150,043.92	3,150,043.92	292,530	358,370	415,840	465,301	507,115	541,643	569,246	Pill users	
374,589.69	374,589.69	117,012	92,380	69,909	49,518	31,125	14,646	0	Male steri	
1,918,778.75	1,918,778.75	322,792	305,809	289,280	273,204	257,582	242,413	227,698	Female st	
4,686,664.01	4,686,664.01	1,170,120	977,952	801,546	640,322	493,699	361,095	241,930	IUD users	
8,843,231.48	8,843,231.48	1,906,711	1,663,012	1,437,492	1,229,513	1,038,437	863,626	704,442	Implant u	
548,773.89	548,773.89	171,423	135,336	102,417	72,544	45,597	21,456	0	Standard I	
		0	0	0	0	0	0	0	Other mo	
1,890,026.35	1,890,026.35	175,518	215,022	249,504	279,181	304,269	324,986	341,548	All traditio	
117,643.15	117,643.15	16,806	16,806	16,806	16,806	16,806	16,806	16,806	Male steri	
490,995.01	490,995.01	70,142	70,142	70,142	70,142	70,142	70,142	70,142	Female st	
1,667,873.55	1,667,873.55	238,268	238,268	238,268	238,268	238,268	238,268	238,268	UD accep	
3,025,391.32	3,025,391.32	432,199	432,199	432,199	432,199	432,199	432,199	432,199	mplant ac	
377,269.32	377,269.32	53,896	53,896	53,896	53,896	53,896	53,896	53,896	SDM acce	

- Switch back to the ImpactNow file. View the second part of the "Scenario Comparison" table, columns four and five. These columns compare Scen2 and Scen3 to the Usual case, or the baseline scenario.
- Finally, view the third part of the table, columns six and seven. This part of the table states the comparison as a percentage of the Usual scenario value; this has the benefit of expressing the size of the difference in outputs relative to the absolute level of output.



# Task 4.5: Navigating to, selecting, and interpreting the incremental cost-effectiveness ratio

- From "Scenario Comparison," navigate to the fourth and final tab, "Incremental Cost Effectiveness."
- Like the "Indicator Analysis" tab, this one analyzes one indicator at a time. Select "Unsafe
  Abortions Averted" from the yellow drop-down menu. The graph displays the FP costs, while the
  table includes additional information, including the incremental cost-effectiveness ratio (ICER).
  The ICER tells us the amount of additional funds that must be invested in family planning to
  achieve one more of the selected outcomes.



• In the "Unsafe Abortions Averted" example, the ICER tells us that setting an ambitious contraceptive policy goal—one that aspires to increase contraceptive prevalence and decrease maternal deaths, as per Scen3—could avert one unsafe abortion for each US\$4 invested in family planning.

#### **GROUP EXERCISE**

Instructions: Please review the following narrative with your group. Use the details below to build an appropriate ImpactNow application. After completing the projection, use the paper and markers provided to visualize the outputs in a way that is effective for advocacy.

#### Narrative #1

The first lady of Benin has announced a new five-year Safe Childhood Initiative with the goal of reducing preventable child deaths. This movement has garnered national attention and the government has made new funding available for programs that reduce child deaths. You are a program manager for an FP service delivery nongovernmental organization and would like to make the case that family planning can contribute to safe childhood. Being a conscientious FP advocate, you also want to advocate for provision of modern contraceptive methods by the government. Please use ImpactNow to demonstrate the benefits of increasing the contraceptive prevalence rate in Benin to 25 percent by 2018. Create multiple scenarios to explore different ways of achieving this goal. Identify at least one country-specific source for demographic data and use this source in your projection.

#### Narrative #2

Uganda's Minister of Health is concerned about the extremely high rate of population growth in his country. Unsurprisingly, the country also has very high unmet need for family planning. As an officer within the Reproductive Health Unit of the Ministry of Health, the minister would like you to estimate the total FP program resources that would be necessary to cut unmet need by half. The minister would also like you to estimate the difference in resource requirements if the country diversified its method mix to include more long-acting methods. Identify at least one country-specific source for demographic data and use this source in your projection.

For more information, contact:

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