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ImpactNow Manual

Estimating the Health and Economic Impacts of Family Planning Use







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NOVEMBER 2014

Health Policy Project and Marie Stopes International

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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.

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.

GETTING 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.^{*} Click on the "Next" arrow to continue.



This version is a working beta. Please contact us to report any bug. Please do not distribute

^{*} 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.

	Configuration	Inputs	Set Policy Goals	Outputs
--	---------------	--------	------------------	---------

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



Previous Forward

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

- Configuration
- Inputs
 But
 - 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
 - o Indicator Analysis
 - o 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.

Ghana
2010
2019

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.

me Screen	Configura	tion	Inputs	S	et Policy Goals	Outputs	
Get Star	ted:						
Configu	re						
Col	intry <mark>Gh</mark> a	ana					
Sta	rt Year 201	0					
End	Year 201	.9					
Sel	ect which wome	n you want to i	nclude in your an	alysis	Select a polic	y goal to configure your o	outputs
	All women	of reproductive age			۵ د	et a Goal for CPR	
	O Ontouron				05	et a Goal for Unmet Need	
	O Uniy wom	en in union of reproduct	ve aye		05	et a goal for Future Budgets	

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 2010 to 2020.

Country	Ghana
Start Year	2015
End Year	2020

The next choice in the **Configuration** page is whether you will conduct your analysis considering all women ages 15–49, or only those women 15–49 who are in union. 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

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.

Inter-quartile plausibility range for the pregnancy rate of women with unmet need

When estimating the number of unintended pregnancies averted due to family planning, analysts must also estimate how many unintended pregnancies there would have been in the absence of FP use. Because ImpactNow analyzes FP users who wish to delay or avoid pregnancy, in the absence of family planning these women would have had an unmet need for it. The radio buttons for the "Inter-quartile plausibility range for the pregnancy rate of women with unmet need" allow you to choose an assumption about the annual pregnancy rate for women with unmet need. Estimates vary between 23 percent (the "Low" assumption) and 38 percent (the "High" assumption). Selecting the "Low" assumption will result in lower impacts. Selecting the "High" assumption will result in higher impacts. The default selection is the "Medium" assumption (31 percent).

If you maintain all other inputs and policy goals and differentiate between two scenarios only by selecting the Low assumption in one and the High assumption in another, the model will produce an inter-quartile plausibility range of estimated impacts. Such a range takes into account the uncertainty behind one of the key, yet difficult to observe, parameters of the model.

Inter-guartile plausibility range for the pregnancy rate of women with unmet need:

O Low (23%) Medium (31%) () High (38%)

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.

			⊖ Full A	ccess Access		
	% of bir attentio	ths requiring on for:	Of the l require % that a	pirths that attention, the are able to	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

Postpartum Care

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.



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."

	Incremental difference Percentage							
				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 dropdown 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 pregnan	cies	s averted						
Program	FP Costs	Outcomes	Inc	remental FP Costs	Difference in X outcome	IC	ER	
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.





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 baseand 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_{Method X} = women at risk for unintended pregnancy * CPR * method $mix_{Method X}$

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:

Users_{Method X} = total FP users * 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.

						Y	ear of	Analysi	s				
		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						
nserl	2011			2.81	2.45	2.14	1.87	1.63					
ır of l	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		
SUM							15.53						

Table 1: Sample LAPM Hypothetical Acceptors Table, Five-year IUD, 2014–2020 Analysis

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.

Methodology

							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			
nser	2014						<mark>6,315</mark>	5,514	4,816	4,205	3,672		
ır of I	2015							<mark>3,365</mark>	2,753	2,404	2,099	1,833	
Yea	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:

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

In turn, the continuers in 2017 are calculated as

 $\sum_{2013}^{2016} continuers = acceptors_{2013}*4.5$ year continuation rate + acceptors_{2014}*3.5 year continuation rate + acceptors_{2015}*2.5 year continuation rate + acceptors_{2016}*1.5 year continuation rate

In the 2017 example (shown in Table 2 above), 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.

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_{Method X} = $users_{Method X}$ * (pregnancy rate of women with unmet need – (1- effectiveness_{Method X}))

The value of the pregnancy rate of women with unmet need depends on your selection in the **Inputs** section, where you selected the Low (23%), Medium (31%), or High (38%) pregnancy rate for women with unmet need (the selection is made separately for each scenario). This inter-quartile plausibility range was estimated using the *Adding It Up* methodology (Singh and Darroch, 2012). The national pregnancy rate among women with unmet need was estimated for 148 developing countries. Each national estimate was obtained by dividing the estimated number of annual unintended pregnancies by the total number of women with unmet need. The Low, Medium, and High values used in ImpactNow represent the 25th, 50th, and 75th percentiles of these national estimates. That is, 25 percent of the national estimates were below a 23 percent pregnancy rate, while 75 percent of the estimates were above 23 percent. Similarly, 75 percent of the national estimates were below, 25 percent were above, a 38 percent pregnancy rate. Selecting the Low assumption will result in a higher estimated number of unintended pregnancies averted by family planning, while selecting the High assumption will result in a lower estimated number. The default setting in ImpactNow is to use the Medium estimate of a 31 percent annual pregnancy rate for women with unmet need.

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.

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

Table 3: Age-Specific Fertility Discount Factors

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

Live births averted are calculated by subtracting abortions, miscarriages, and stillbirths from the number of unintended pregnancies averted. This equation describes the distribution of how all pregnancies end:

 $\mathbf{P} = \mathbf{L}\mathbf{B} + \mathbf{S}\mathbf{B} + \mathbf{A} + \mathbf{M}_{\mathbf{a}} + \mathbf{M}_{\mathbf{b}}$

P: Pregnancies

LB: Live births

SB: Stillbirths per live birth. 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: Abortions per live birth. Because the abortion rate is expressed in terms of abortions per 100 live births, we divide it by 100:

 $\mathbf{A} = \text{Abortion rate}/100$

Ma: Miscarriages that would have led to abortion, per live birth:

 M_a = Abortion per live birth * miscarriages per abortion

M_b: Miscarriages that would have led to birth, per live birth:

 M_b = Miscarriage per pregnancy that reaches 27 weeks * total births

Where **total births** = live births + stillbirths

Solving the formula for live births yields a pregnancies-to-live-births converter:

$$\mathbf{LB} = \mathbf{P} - \mathbf{SB} - \mathbf{A} - \mathbf{M}_{a} - \mathbf{M}_{b}$$

Pregnancies-to-live-births converter = P - stillbirth rate/(1,000-stillbirth rate) - abortion rate/100 abortion per live birth * miscarriages per abortion miscarriage per pregnancy that reaches 27 weeks * total births

This converter is applied to the number of unintended pregnancies averted, yielding the total number of live births averted.

Live births averted = unintended pregnancies averted * pregnancies-to-live-births converter

Abortions averted (total and unsafe)

Abortions are assumed to be averted at the average rate of abortion reported for the country overall. Because the abortion rate is reported per 100 live births, the total number of abortions averted is

Abortions averted = abortion rate*(live births averted/100)

Unsafe abortions are calculated in a similar way, applying the unsafe abortion rate to every hundred live births averted:

Unsafe abortions averted = unsafe abortion rate*(live births averted/100)

Maternal deaths averted

Estimates of maternal deaths averted due to FP use are based on an adjustment made to the national maternal mortality ratio (MMR) to account for the specific risk distribution of unintended pregnancies. Risk of maternal death is estimated separately for four pregnancy outcomes: safe abortions, unsafe abortions, miscarriages, and live births.

1. Mortality ratio for safe abortions is set at 2 deaths per 100,000 safe abortions (Singh and Darroch, 2012).

Mortality ratio safe abortions = 2 deaths per 100,000 safe abortions

2. Mortality ratio for unsafe abortions is scaled based on the national MMR. The scale is a ratio of the subregional unsafe abortion mortality (WHO, 2011) to the subregional MMR (WHO, 2014). This gives an estimate of the relative riskiness of unsafe abortion compared to the overall risk of maternal death. This estimate is made because national estimates of unsafe abortion mortality ratios are not available.

Mortality ratio unsafe abortions = MMR * (subregional unsafe abortion ratio/subregional MMR)

3. Mortality ratio for miscarriages is assumed to be equal to the national MMR. This is a proxy, because there are no data available on maternal mortality due to miscarriages.

Mortality ratio miscarriages = MMR

4. Mortality ratio for live births is estimated as a residual between the total number of maternal deaths nationally and those attributed to abortion and miscarriage.

Mortality ratio live births = (MMR * live births - mortality ratio safe abortions * safe abortions - mortality ratio unsafe abortions * unsafe abortions - mortality ratio miscarriages * miscarriages)/live births

The total number of maternal deaths averted due to FP use is the sum of those averted by each of these four pregnancy outcomes:

Maternal deaths averted due to FP use = (mortality ratio safe abortions * safe abortions
	+ mortality ratio unsafe abortions * unsafe
1	abortions + mortality ratio miscarriages *
1	miscarriages + mortality ratio live births * live
1	births)/100,000

Note that the four mortality ratios may not be added up because each is expressed as a ratio per 100,000 of a specific pregnancy outcome. For example, the mortality ratio of unsafe abortions is expressed in terms of 100,000 unsafe abortions, not in terms of 100,000 live births (as is the case with the MMR). This methodology adjusts the national MMR, which reflects the national distribution of pregnancy outcomes, to account for the fact that unintended pregnancies have a different distribution of outcomes, and therefore a different risk profile.

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:

Total FP costs =
$$\sum_{i=1}^{n}$$
 users of method_i * annual cost - per - 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.

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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

$$= \sum_{i=1}^{n} \% \text{ of women in need}_{Intervention i} * \text{ Cost of treatment}_{Intervention i}$$
average cost per live birth

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

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



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

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

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

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

ICER_{Outcome 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

 $ICER_{maternal deaths averted} = (\$278,000,000-\$259,000,000)/(36,673-34,114) = \$7,425 \text{ per maternal death averted.}$

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.



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" \rightarrow "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."



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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 "Zimbabwe."

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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.

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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," or "Only women in union of reproductive age" (women of reproductive age are defined as women ages 15–49).

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 of women who align 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."

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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."

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• 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.

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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 "% of women that are in union"

- Navigate to the "Health Indicators" input tab.
- Note that the percentage of women that are in union is 57.7 percent, as per the 2005 Demographic Health Survey (DHS). Since a new DHS was released in 2011, you can choose to update this input data.
- Type "2011 DHS" into the Comments/Source box.
- Type "62.2%" into the Input box.
- Both new entries should turn blue, indicating that they have been modified from the default.



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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 42 percent, as per the 2012 *Adding It Up* report (Singh and Darroch, 2012).
- 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.
- Both new entries should turn blue, indicating that they have been changed from their defaults.

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34

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.

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		Health	Indicat	ors: Scen	2					
Health Indicators Effectiveness of Contraceptives Median Age of Use for Contraceptives Health Care Utilization per Pregnancy	Scenario Name Scen2 Load Default Data % of women that are in union Abortion Rate (per 100 live bi Stillbirth Rate (per 100 live bi Unsafe abortion ratio (per 100 % of unsafe abortions needing Discount Rate for Monetary Co	ad Usual ths) rths) live births) PAC sts and Benefits	Microsoft Excel	you sure you want to lo page will be replaced w 3.00 3	nd from another scenario? the settings from the ch Yes 6 Global /	All settings on nosen scenario. No Assumption	2008) ar 2008) ar 3y			
Health Care	Parameter	2014	2020		Comments/Se	ource				
LiveBirth	Women ages 15-49 MMR	3,745,089 4 490.00	647.20	UN Population Interpolation	Prospects 2010 Re	evision				

• Your Scen2 inputs should now look like the image below, with the percentage of women that are in union updated to 62.2 percent. You may click on the "Health Care Utilization per Pregnancy" tab to see that the ANC figure has been updated as well.

4

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Effectiveness of Contraceptives Median Age of	% of women that are in union Abortion Rate (per 100 live bit	ths)		62.20%	2011 DHS WHO Uns	iments/Source : afe Abortion (20	108) a		
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Pregnancy	Discount Rate for Monetary C	osts and Benefits		3.00%	Global As	sumption			
Health Care	Parameter	2014	2020		Comments/Sour	ce			
Live Birth	Women ages 15-49 MMR	3,745,089 490.00	4,622,123 647.20	UN Population F Interpolation	rospects 2010 Revi	sion			
Ready									

• 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.

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

4 Ready

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."

ImpactNOW	Configuration	Inputs Set Policy Go	pals Outputs	Previous Forward
	CPR P	olicy Goal - Unmet N	eed Yr1 and CPR	
	Unmet Need		CPR	
	Base	Base	Usual Scen2	Scen3
CPR	2014 Source / Comment	2014 Source / Commer	t 2020 2020	2020
	24.05% DHS 2011	31.85% DHS 2011	12.95% 12.95%	12.95%
Method Mix FP Costs				

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 "12.8" in the 2014 yellow field corresponding to Unmet Need Base. Change the source information to "DHS 2010–2011."

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	¢	\diamond
					Previous	Forward

CPR									
	Ur	nmet Need		CPR					
	Base		Base		Usual	Scen2	Scen3		
Method Mix	2014	Source/Comment	2014	Source/Comment	2020	2020	2020		
	12.80%	DHS 2010-2011	31.85%	DHS 2009	12.95%	12.95%	12.95%		

CPR Policy Goal - Unmet Need Yr1 and CPR

• Adjust the base-year contraceptive prevalence estimate by entering "58.5" in the corresponding 2014 yellow data field. Change the source information to "DHS 2010–2011."

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	$\langle \! \! \diamond \! \! \rangle$	\diamond
					Previous	Forward

CPR Policy Goal - Unmet Need Yr1 and CPR

CPR							
	Un	met Need			CPR		
	Base		Base		Usual	Scen2	Scen3
Method Mix	2014	Source/Comment	2014	Source/Comment	2020	2020	2020
	12.80%	DHS 2010-2011	58.50%	DHS 2010-2011	12.95%	12.95%	12.95%

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 "58.5" in the corresponding yellow data field.

ImpactNOW

	Outputs	Set Policy Goals	Inputs	Configuration
Previous				

CPR									
	Ui	nmet Need		CPR					
	Base		Base		Usual	Scen2	Scen3		
Method Mix	2014	Source/Comment	2014	Source/Comment	2020	2020	2020		
	12.80%	6 DHS 2010-2011	58.50%	DHS 2010-2011	58.50%	12.95%	12.95%		

CPR Policy Goal - Unmet Need Yr1 and CPR

• Set an *ambitious* contraceptive use policy goal for Scen2 by entering "64" in the corresponding 2020 yellow data field.

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	$\langle \! \! \diamond \! \! \rangle$	\bigcirc
					Previous	Forward

CPR Policy Goal - Unmet Need Yr1 and CPR

CPR										
	Ur	nmet Need		CPR						
	Base		Base		Usual	Scen2	Scen3			
Method Mix	2014	Source/Comment	2014	Source/Comment	2020	2020	2020			
	12.80%	6 DHS 2010-2011	58.50%	DHS 2010-2011	58.50%	64.00%	12.95%			

• Finally, set the most ambitious contraceptive use policy goal for Scen3 by entering "74" in the corresponding 2020 yellow data field.

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	\diamond	\diamond
					Previous	Forward

CPR Policy Goal - Unmet Need Yr1 and CPR

CPR	,									
		U	nmet Need		CPR					
		Base		Base		Usual	Scen2	Scen3		
Method Mix		2014	Source/Comment	2014	Source/Comment	2020	2020	2020		
		12.809	6 DHS 2010-2011	58.50%	DHS 2010-2011	58.50%	64.00%	74.00%		

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:
 - Male condom: 5.3%
 - o Injectable: 14.2%
 - o Pill: 70.6%
 - Male sterilization: 0%
 - Female sterilization: 1.9%
 - o IUD: 0.3%
 - o Implant: 4.6%
 - Standard Days Method: 0%
 - Other modern: 0.9%
 - o All traditional: 2.2%
 - o Other country-specific: Empty

The method mix should add up to 100 percent.

ImpactNO	W Conf	iguration	l	nputs		Set Policy	Goals	C	Dutputs		\diamond	\diamond	
	-		С	PR Polic	cy G	oal - N	letho	d Mix			Previous	Forward	
CPR			\int	Base 2014		Usual 2020	Scen2 2020	Scen3 2020	<u>_Co</u>	omments	/ Source		
Method Mix	Male condom Injectable Pill			5.30% 14.20% 70.60%		8.13% 46.25% 14.69%	8.13% 46.25% 14.69%	8.13% 46.25% 14.69%	DH DH DH	HS 2011 HS 2011 HS 2011			
FP Costs	Male sterilizat Female steriliz	ion ation		0.00%		0.00%	0.00%	0.00%	DH	HS 2011 HS 2011			
	Implant Standard Days	Method (SDM)		4.60% 0.00%		4.06%	4.06% 0.00%	4.06% 0.00%	DH	HS 2011 HS 2011 HS 2011			
	Other modern All Traditional Other country-	specific		0.90%		1.25% 12.50%	1.25% 12.50%	1.25% 12.50%	DH DH DH	HS 2011 HS 2011 HS 2011			
	Total			100.00%	J	100.00%	100.00%	100.00%					

• 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.

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	\diamond	\diamond
					Previous	Forward

CPR		Base	Usual	Scen2	Scen3	Comments / Source
		2014	2020	2020	2020	
Method Mix	Male condom	5.30%	5.30%	8.13%	8.13%	DHS 2011
	Injectable	14.20%	14.20%	46.25%	46.25%	DHS 2011
	Pill	70.60%	70.60%	14.69%	14.69%	DHS 2011
FP Costs	Male sterilization	0.00%	0.00%	0.00%	0.00%	DHS 2011
	Female sterilization	1.90%	1.90%	10.00%	10.00%	DHS 2011
	IUD	0.30%	0.30%	3.13%	3.13%	DHS 2011
	Implant	4.60%	4.60%	4.06%	4.06%	DHS 2011
	Standard Days Method (SDM)	0.00%	0.00%	0.00%	0.00%	DHS 2011
	Other modern	0.90%	0.90%	1.25%	1.25%	DHS 2011
	All Traditional	2.20%	2.20%	12.50%	12.50%	DHS 2011
	Other country-specific					DHS 2011
	Total	100.00%	100.00%	100.00%	100.00%	

CPR Policy Goal - Method Mix

• 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 Pill. For Injectable, replace the existing value with "28.40." For Pill, change the data input to "56.40." Ensure that the method mix adds up to 100 percent.

ImpactNOW	Configuration	Inputs	Set Policy	/ Goals	Out	puts	🔶 🔷	
							Previous Forward	
_		CPR Policy	Goal - N	Nethod	Mix			
CPR		Base 2014	Usual 2020	Scen2 2020	Scen3 2020	Commen	ts / Source	-
Method Mix	Male condom	5.30%	5.30%	5.30%	8.13%	DHS 201	1	
	Pill	70.60%	70.60%	56.40%	14.69%	DHS 201	1	
FP Costs	Male sterilization	0.00%	0.00	0.00%	0.00%	DHS 2011	1	
	Female sterilization	1.90%	1.90%	1.90%	10.00%	DHS 2011	1	
	IUD	0.30%	0.30%	0.30%	3.13%	DHS 2013	1	
	Implant	4.60%	4.60%	4.60%	4.06%	DHS 2013	1	
	Standard Days Method (SDM)	0.00%	0.00%	0.00%	0.00%	DHS 2011	1	
	Other modern	0.90%	0.90%	0.90%	1.25%	DHS 2011	1	
	All Traditional	2.20%	2.20%	2.20%	12.50%	DHS 2013	1	
	Other country-specific					DHS 2013	1	
	Total	100.00%	100.009	100.00%	10.00%			

- 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: 10%
 - o Injectable: 15%
 - Pill: 30%
 - o Male sterilization: 2%
 - Female sterilization: 2%
 - o IUD: 30%
 - o Implant: 7.9%
 - o Standard Days Method: 0%
 - Other modern: 0.9%
 - All traditional: 2.2%
 - o Other country-specific: Empty

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

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	
_		CPR Policy	Goal - Metho	d Mix	Previous Forward
CPR		Base 2014	Usual Scen2 2020 2020	Scen3 Con 2020	nments / Source
Method Mix	Male condom	5.30%	5.30% 5.30%	10.00% DH	5 2011
	Injectable	14.20%	14.20% 28.40%	15.00% DHS	5 2011
	Pill	70.60%	70.60% 56.40%	30.00% DHS	5 2011
FP Costs	Male sterilization	0.00%	0.00% 0.00%	2.00% DHS	5 2011
	Female sterilization	1.90%	1.90% 1.90%	2.00% DHS	5 2011
	IUD	0.30%	0.30% 0.30%	30.00% DHS	5 2011
	Implant	4.60%	4.60% 4.60%	7.90% DHS	5 2011
	Standard Days Method (SDM)	0.00%	0.00% 0.00%	0.00% DHS	5 2011
	Other modern	0.90%	0.90% 0.90%	0.90% DHS	5 2011
	All Traditional	2.20%	2.20% 2.20%	2.20% DHS	5 2011
	Other country-specific			DHS	\$ 2011
	Total	100.00%	100.00% 100.00%	100.00%	

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.

ImpactNOW	Configuration	Inputs	Set Policy Goals	Outputs	🗇 🗇
		CPR Poli	cy Goal - FP Cos	ts	Previous Forward
CPR		Cost (\$)	Comments / Source		
Method Mix	Male condom	4.15 Add	ding it up report (June 201)	2), Guttmacher institute	
FP Costs	Pill Male sterilization	8.72 Add 1.59 Add	ding it up report (June 2012 ding it up report (June 2012 ding it up report (June 2012	2), Guttmacher institute 2), Guttmacher institute 2), Guttmacher institute	
	IUD Implant	1.01 Add 7.74 Add	ding it up report (June 2012) ding it up report (June 2012) ding it up report (June 2012)	2), Guttmacher institute 2), Guttmacher institute 2), Guttmacher institute	
	Standard Days Method (SDM) Other modern All Traditional	0.00 Add 5.02 Add 0.00 Add	ding it up report (June 2012 ding it up report (June 2012 ding it up report (June 2012	2), Guttmacher institute 2), Guttmacher institute 2), Guttmacher institute	
	Other country-specific	Add	ding it up report (June 2012	2), Guttmacher institute	

Save the file by clicking "File" \rightarrow "Save"

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."

ImpactNOW	1	Configu	ration		nputs		Set Poli	cy Goals		Outputs		\bigcirc	
						CPR	Analy	/sis			Previous	Forward	
Indicator Analysis Summary	450,000 400,000 350,000	t Births averte	ed								CPR by Year	2014	2020
Tables Scenario	300,000 250,000 200,000									Usual Scen2	Usual Scen2 Scen3	59% 59% 59%	59% 64% 74%
Comparison	100,000 50,000 0		1	1		1	1	1		-Scen3			
Cost Effectiveness		2014 2014	2015 2015	2016 2016	2017 2017	2018	2019	2019 2020	2020				
	Usual Scen2 Scen3	232,358 229,036 229,036	241,427 2 242,646 2 252,255 2	250,496 256,637 276,878	259,565 271,012 302,940	268,634 285,775 330,477	277,703 300,928 359,526	286,772 316,476 390,123					
	* Acceptor res	ults are expresse	d as the averag	e annual nu	mber of acc	eptors over	the course	of the period (of 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.

ImpactNOW		Configu	iration		Inputs		Set Poli	cy Goals		Outputs		\bigcirc	
r						CPR A	Analy	/sis			Previous	Forward	
Indicator Analysis	90,000 80,000	Unsare Abo	rtions Averted]						CPR by Year		
Summary Tables	70,000 60,000 50,000										Usual Scen2	2014 59% 59%	2020 59% 64%
Scenario Comparison	40,000 30,000 20,000									Scen2 Scen3	Scen3	59%	74%
Incremental Cost Effectiveness	0	2014	2015	2016	2017	2018	T	2019	2020				
	Usual	2014 46,034	2015 47,830	2016 49,627	2017 2 51,424 53	018 8,220 .	2019 55,017	2020 56,814					
(Scen2 Scen3	45,376 45,376	48,072 49,976	50,844 54,854	53,692 56 60,017 65	5,473 3	59.619 71,228 e course	62,699 77,289 of the period	of analysis.				

• 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.

ImpactNOW		Configuration	Inputs	Set Policy Goa	ls	Outputs		\diamond
r				CPR Analysis			Previous	Forward
Indicator Analysis	30,000,000	Maternal & infant healthcar	re costs av				CPR by Year	
Summary Tables	25,000,000						Usual Scen2	2014 2020 59% 59% 59% 64%
Scenario Comparison	10,000,000					Scen2 Scen3	Scen3	59% 74%
Incremental Cost Effectiveness	0	2014 2015	2016 2017	2018 2019	2020			
	Usual	2014 2015 15,296,976 15,894,023 16	2016 2017 20 5,491,070 17,088,117 17,68	18 2019 202 15,164 18,282,211 18,879	,258			
	Scen2 Scen3 * Acceptor result	15,078,318 15,974,302 16 15,078,318 16,606,895 18 ts are expressed as the averag	5,695,569 17,841,736 18,81 3,227,881 19,943,643 21,75 ge annual number of accepto	:5,618-19,611,231-20,834 :6,547-23,668,960-25,683 rs over the course of the pe	,790 ,246 eriod of analysis.			

• Next, select "Unintended pregnancies averted" from the yellow drop-down menu. Below, note the number of unintended pregnancies averted by scenario in 2020:

ard

- Usual: _____
- o Scen2: _____
- o Scen3:
- Which scenario averted the most unintended pregnancies in 2020?

Answers found at the end of this exercise.¹

- Finally, select "Infant deaths averted" from the yellow drop-down menu. Below, note the number • of infant deaths prevented by scenario in 2020:

 - Usual: ______
 Scen2: ______
 - o Scen3:
 - Which scenario prevented the most infant deaths in 2020?

Answers found at the end of this exercise."

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.

mpactNOW	Configuration		Inputs	Set	Policy Goals		Outputs		>	
				CPR Ar	alysis			Pro	evious	Fc
Indicator	Usual									
Anaiysis	Indicator	2014	2015	2016	2017	2018	2019	20 20		
	Unintended pregnancies averted	336,007	349,121	362,235	375,350	388,464	401,579	414,693		
Summary	Births averted	232,358	241,427	250,496	259,565	268,634	277,703	286,772		
ables	Abortions Averted	48,072	49,948	51,824	53,701	55,577	57,453	59,329		
	Unsafe Abortions Averted	46,034	47,830	49,627	51,424	53,220	55,017	56,814		
	Maternal deaths averted	1,139	1,246	1,359	1,476	1,598	1,725	1,856		
cenario	Infant deaths averted	4,688	4,871	5,054	5,236	5,419	5,602	5,785		
omparison	DALYs averted	471,365	493,931	516,810	540,002	563,507	587,325	611,457		
	Maternal & infant healthcare costs	15,296,976	15,894,023	16,491,070	17,088,117	17,685,164	18,282,211	18,879,258		
ncremental	Unmet Need	12.80%	12.80%	12.80%	12.80%	0	0	0		
Cost	Total FP costs	11,080,880	11,513,371	11,945,862	12,378,354	12,810,845	13,243,336	13,675,827		
ffectiveness	Cost-benefit ratio	1.38	1.38	1.38	1.38	1	1	1		
	Total users	1,362,726	1,415,913	1,469,101	1,522,289	1,575,476	1,628,664	1,681,852		
	Condom users	72,224	75,043	77,862	80,681	83,500	86,319	89,138		
	Injectable users	193,507	201,060	208,612	216,165	223,718	231,270	238,823		
	Pill users	962,084	999,635	1,037,185	1,074,736	1,112,286	1,149,837	1,187,387		
	Male sterilization users	0	0	0	0	0	0	0		
	Female sterilization users	25,892	26,902	27,913	28,923	29,934	30,945	31,955		
	IUD users	4,088	4,248	4,407	4,567	4,726	4,886	5,046		
	Implant users	62,685	65,132	67,579	70,025	72,472	74,919	77,365		
	Standard Days Method (SDM) users	0	0	0	0	0	0	0		
	Other modern users	12,265	12,743	13,222	13,701	14,179	14,658	15,137		
	All traditional users	29,980	31,150	32,320	33,490	34,660	35,831	37,001		
	Male sterilization acceptors *	0	0	0	0	0	0	0		
	Female sterilization acceptors *	6,152	6,152	6,152	6,152	6,152	6,152	6,152		
	IUD acceptors *	1,027	1,027	1,027	1,027	1,027	1,027	1,027		
	Implant acceptors *	20,037	20,037	20,037	20,037	20,037	20,037	20,037		
	SDM acceptors *	0	0	0	0	0	0	0		

• 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."

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y the selection and put it on								
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Implant acceptors *	21,510	21,510	21,510	21,510	21,5	10 21,510	21,510	
SDM acceptors *	0	0	0	0		0 0	0	
Scen3								
Indicator	2014	2015	2016	2017	2018	2019	20.20	
Unintended pregnancies averted	331,204	364,780	400,386	438,073	477.8	95 519,902	564,14	
Eirths averted	229,036	252,255	276,878	302,940	330,4	77 359,526	390,123	
Abortions Averted	47,385	52,188	57,282	62,674	68,3	71 74,381	80,711	
Unsafe Abortions Averted	45,376	49,976	54,854	60,017	65,4	73 71,220	77,289	
Maternal deaths averted	1,122	1,194	1,264	1,333	1,3	99 1,462	1,521	
Infant deaths averted	4,621	5,089	5,586	6,112	6,6	67 7,259	7,870	
DALYs averted	464,628	508,959	555,597	604,568	655,8	94 709,599	765,703	
Maternal & infant healthcare costs	15,878,318	16,606,895	18,227,881	19,945,645	21,756,5	47 23,668,960	25,683,246	
Unmet Need	12.80%	10.22%	7.63%	5.05%		0 0	0	
Total FP costs	11,080,880	11,860,892	11,571,447	11,706,245	11,758,9	86 11,728,871	11,598,099	
Cost-benefit ratio	1.36	1.46	1.58	1.70		2 2	2	
Total users	1,362,726	1,478,439	1,598,851	1,723,959	1,853,7	66 1,988,270	2,127,471	
Condom users	72,224	89,938	109,788	131,883	156,3	34 183,252	212,747	
injectable users	193,507	211,910	231,300	251,698	273,1	21 295,589	319,121	
Fill users	962,004	943,737	912,411	867,152	807,0	06 731,020	638,241	
Male sterilization users	0	4,928	10,659	17,240	24,7	17 33,130	42,549	
Female sterilization users	25,892	28,337	30,911	33,617	36,4	57 39,434	42,549	
IUD users	4,088	77,618	163,083	261,180	372,6	07 498,062	638,241	
Implant users	62,685	76,140	91,134	107,747	126,0	56 146,138	168,070	
Standard Days Method (SDM) users	0	0	0	0		0 0	0	
Other modern users	12,265	13,306	14,890	15,516	16,6	84 17,894	19,147	
All traditional users	29,980	32,526	85,175	87,927	40,7	83 43,742	46,804	
Male sterilization acceptors *								
Female sterilization acceptors *								
IUD acceptors *	128,735	128,735	128,735	128,735	128,7	35 128,735	128,735	
implant acceptors *	38,028	38,028	38,028	38,028	38,0	28 38,028	38,028	

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7 Infant dea	4620.609	5089.027	5585.763	6111.542	6567.089	7253.13	7870.389				
8 DALYs ave	464627.6	508959.1	555597.3	604567.7	655894.1	709598.9	765702.9				
9 Maternal 1	5078318	16606895	18227881	19943643	21756547	23668960	25683246				
10 Unmet Ne	0.128	0.102167	0.076333	0.0505	0.024667	-0.00117	-0.027				
11 Total FP ct 1	1080880	11360892	11571447	11706245	11758986	11723371	11593099				
12 Cost-bene	1.360751	1.46176	1.575246	1.703676	1.850206	2.018955	2.215391				
13 Total user	1362726	1478439	1598951	1723959	1853766	1988270	2127471				
14 Condom u	72224.45	89938.39	109787.7	131882.9	156334.2	183252.2	212747.1				
15 Injectable	193507	211909.6	231300.4	251698.1	273121.5	295589.4	319120.6				
16 Pill users	962084.2	943737.1	912410.8	867151.6	807006	731020.4	638241.2				
17 Male steri	0	4928.131	10659	17239.59	24716.88	33137.83	42549.42				
18 Female st 1	25891.79	28336.75	30911.11	33617.21	36457.39	39434.01	42549.42				
19 IUD users	4088.177	77618.07	163082.8	261179.9	372606.9	498061.5	638241.2				
20 Implant u: 6	52685.37	76139.63	91134.49	107747.5	126056.1	145137.8	168070.2				
21 Standard (0	0	0	0	0	0	0				
22 Other more 3	12264.53	13305.95	14389.66	15515.63	16683.89	17894.43	19147.24				
23 All traditic 1	29979.96	32525.67	35174.71	37927.11	40782.85	43741.93	46804.36				
24 Male sten											
25 Female st											
26 IUD accept 1	128735.2	128735.2	128735.2	128735.2	128735.2	128735.2	128735.2				
27 Implant ac 3	38028.42	38028.42	38028.42	38028.42	38028.42	38028.42	38028.42				
28 SDM acces	0	0	0	0	0	Ū	0				
29											

• 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.²

pactivow	Configuration	Inputs		et Policy Goals	0	utputs		Ý
_			CPR A	analysis			Previous	Forward
dicator ialysis				[Incremental d compared t	ifference o Usual	Percentage difference	
	Indicator	Usual	Scen2	Scen3	Scen2	Scen3	Scen2	Scen3
mmary	Unintended pregnancies averted	2,627,450	2,751,172	3,096,385	123,722	468,935	5%	18%
Dies	Births averted	1,816,953	1,902,511	2,141,235	85,557	324,282	5%	18%
	Abortions Averted	375,904	393,605	442,994	17,701	67,090	5%	18%
enario	Unsafe Abortions Averted	359,966	376,917	424,212	16,950	64,245	5%	18%
mparison	Maternal deaths averted	10,398	10,925	9,296	527	(1,101)	5%	-11%
	Infant deaths averted	36,655	38,381	43,198	1,726	6,542	5%	18%
	DALYs averted	3,784,398	3,965,052	4,264,948	180,654	480,550	5%	13%
tremental	Maternal & infant healthcare costs averted	119,616,819	125,249,365	140,965,490	5,632,546	21,348,671	5%	18%
ist	Unmet Need	12.80%	10.05%	5.05%	(0)	(0)	-21%	-61%
recuveness	Total FP costs	86,648,476	91,266,983	80,794,920	4,618,507	(5,853,556)	5%	-7%
	Cost-benefit ratio	1	1	2	(0)	0	-1%	26%
	Total users	10,656,021	11,180,281	12,133,481	524,260	1,477,460	5%	14%
	Condom users	564,769	592,555	956,167	27,786	391,398	5%	69%
	Injectable users	1,513,155	2,434,109	1,776,247	920,954	263,092	61%	17%
	Pill users	7,523,151	7,046,769	5,861,651	(476,382)	(1,661,499)	-6%	-22%
	Male sterilization users	0	0	133,231		133,231		
	Female sterilization users	202,464	212,425	237,198	9,961	34,733	5%	17%
I	IUD users	31,968	33,541	2,014,879	1,573	1,982,910	5%	6203%
	Implant users	490,177	514,293	777,971	24,116	287,794	5%	59%
	Standard Days Method (SDM) users	0	0	0				
I	Other modern users	95,904	100,623	109,201	4,718	13,297	5%	14%
I	All traditional users	234,432	245,966	266,937	11,534	32,504	5%	14%
I	Male sterilization acceptors *	0	0	0	-			
	Female sterilization acceptors *	43,065	0	0	(43,065)	(43,065)	-100%	-100%
	IUD acceptors *	7,191	7,876	901,146	686	893,955	10%	12432%
	Implant acceptors *	0	0	0	-	-		
	SDM acceptors *	0	0	0		623		

• View the first three columns of the table, which report the cumulative values for each output. Select the column marked Scen3 and click "Copy."

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alysis					compared t	to Usual	compare	d to Usual
	Indicator	tiqual	Sren2	Scen'l	Sen2	Seen3	Sten2	Seen 3
amary	Unintended premancies averted	2 627 450	2 751 172	8 096 385	128 722	468.935	5%	18%
les	Births averted	1,616,953	1 902 511	2,141,235	85,557	324,282	5%	18%
	Abortions Averted	\$75,904	393,605	442,994	17,701	67,090	5%	18%
optio	Unsafe Abortions Averted	359,966	376,917	424,212	16,950	64,245	5%	18%
maarison	Maternal deaths averted	10,396	10,925	9,296	527	(1.101)	5%	-11%
	Infant deaths averted	36,655	38,381	48,198	1,726	6,542	5%	18%
	DALYs averted	3,764,390	3,965,052	4,264,948	100,654	460,550	5%	13%
remental	Maternal & infant healthcare costs averted	119,616,819	125,249,865	140,965,490	5,682,546	21,848,671	5%	18%
	Unmet Need	12.80%	10.05%	5.05%	(0)	(0)	-21%	-61%
ectiveness	Total FP costs	86,648,476	91,266,983	80,794,928	4,618,507	(5,853,556)	5%	-7%
- 1	Cost-benefit ratio	1	1	2	(0)	0	-1%	25%
I	Total users	10,656,021	11,100,201	12,133,481	524,260	1,477,460	5%	14%
I	Condom users	564,769	592,555	956,167	27,786	391,398	5%	69%
I	Injectable users	1,513,155	2,434,109	1,776,247	920,954	263,092	61%	17%
I	Pill users	7,528,151	7,046,769	5,861,651	(476,382)	(1,661,499)	-6%	-22%
I	Male sterilization users	0	0	133,231		133,231	100	
I	remaie stenication users	202,464	212,425	237,198	9,961	54,733	536	17%
I	IOD USERS	81,968	33,541	2,014,879	1,573	1,982,910	5%	6203%
- 1	Shandard Dam Mathed (SDM) ware	450,177	514,293	777,371	24,116	267,794	536	335%
I	Other madern users	05.004	100 673	109.201	4.715	19.207	SV.	141
I	All traditional mers	254,455	200,623	266,002	11 534	32.604	5%	14%
I	Male sterilization accentors *	204,452	245,966	200,937	21,004	32,504	3.6	7439
1	Female sterilization accentors *	43.065		0	613.0653	(43.065)	-100%	-100%
	IID accentors *	2 1 91	7 876	901 145	686	893 955	10%	12492%
1		1,471	1,070	PV4,440	000	444,899	AV/7	AATJ679
	Implant accenters *	0						
	Implant acceptors * SDM acceptors *	0	0	0				

 $^{^{2}}$ 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:
 - Select cell J2 and click "Paste Values." Now the Scen3 annual and cumulative values are both on one sheet.
 - In cell J1, type "Cumulative Values Scen3" to name the column.
 - o In cell K1, type "Cumulative Values Check."
 - In cell K2, enter the formula "=sum(B2:H2)" and hit enter. Compare whether this value matches the value in J2.

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	Indicator	2014	2015	2016	2017	2018	2019	2020		Cumulative	Values Scend	
-	Unintended pregnancies averted	331203.6	364779.7	400385.5	438073.2	477894.6	519901.8	564146.7		3096	385.163	3096385
3	Births averted	229036.4	252255.1	276877.5	302939.6	330477.2	359526.3	390122.9		2141	235.076	
4.	Abortions Averted	47384.65	52188.31	57282.37	62674.27	68371.44	74381.33	80711.36		4429	93.7162	
È.	Unsafe Abortions Averted	45375.64	49975.63	54853.71	60017	65472.63	71227.71	77289.36		4242	11.6678	
	Maternal deaths averted	1122.278	1194.008	1264.407	1332.934	1399.02	1462.074	1521.479		9296	.200709	
	Infant deaths averted	4620.609	5089.027	5585.763	6111.542	6667.089	7253.13	7870.389		4319	7.54875	
	DALYs averted	464627.6	508959.1	555597.3	604567.7	655894.1	709598.9	765702.9		4264	947.679	
	Maternal & infant healthcare costs averted	15078318	16606895	18227881	19943643	21756547	23668960	25683246		1409	65489.5	
0	Unmet Need	0.128	0.102167	0.076333	0.0505	0.024667	-0.00117	-0.027		0.	0505	
1	Total FP costs	11080880	11360892	11571447	11706245	11758986	11723371	11593099		8079	4919.54	
2	Cost-benefit ratio	1.360751	1.46176	1.575246	1.703676	1.850206	2.018955	2.215391		1.740	0854977	
3	Total users	1362726	1478439	1598851	1723959	1853766	1988270	2127471		1213	3480.98	
4	Condom users	72224.45	89938.39	109787.7	131882.9	156334.2	183252.2	212747.1		9561	166.982	
5	injectable users	193507	211909.6	231300.4	251698.1	273121.5	295589.4	319120.6		1776	246.638	
6	Pill users	962084.2	943737.1	912410.8	867151.6	807006	731020.4	638241.2		5861	651.38	
7	Male sterilization users	0	4928.131	10659	17239.59	24716.88	33137.83	42549.42		1332	30.8469	
8	Female sterilization users	25891.79	28336.75	30911.11	33617.21	36457.39	39434.01	42549.42		2371	97.6809	
9	UD users	4088.177	77618.07	163082.8	261179.9	372606.9	498061.5	638241.2		2014	878.519	
0	Implant users	62685.37	76139.63	91134.49	107747.5	126056.1	146137.8	168070.2		7779	71.0223	
1	Standard Days Method (SDM) users	0	0	0	0	0	0	0			0	
2	Other modern users	12264.53	13305.95	14389.66	15515.63	16683.89	17894.43	19147.24		1092	01.3288	
3	All traditional users	29979.96	32525.67	35174.71	37927.11	40782.85	43741.93	46804.36		2669	36.5815	
4	Male sterilization acceptors *										0	
5	Female sterilization acceptors *										0	
6	UD acceptors *	128735.2	128735.2	128735.2	128735.2	128735.2	128735.2	128735.2		9011	46.4143	
7	implant accentors *	38028.42	38028.42	38028 42	38028 42	38028 42	38028 42	38028 42		-011	0	
9	Management *	00020.42	00020142	00020.42	00020.42	00020.42	00020.42	0			0	
2	and acceptors	0	0	0	0	0	0	U				

• 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.

pactNOW	Configuration	Inputs		Set Policy Goal	ls C	outputs		• 🔶 .
			CPR	Analysis			Previous	Forward
dicator				ſ	Incromontal	difforence	Dorcontog	difforence
alysis					compared	to Usual	compare	d to Usual
In	ndicator	Usual	Scen2	Scen3	Scen2	Scen3	Scen2	Scen3
imary U	Inintended pregnancies averted	2,627,450	2,751,172	3,096,385	123,722	468,935	5%	18%
les	irths averted	1,816,953	1,902,511	2,141,235	85,557	324,282	5%	18%
A	bortions Averted	375,904	393,605	442,994	17,701	67,090	5%	18%
nario U	Insafe Abortions Averted	359,966	376,917	424,212	16,950	64,245	5%	18%
parison M	faternal deaths averted	10,398	10,925	9,296	527	(1,101)	5%	-11%
In	afant deaths averted	36,655	38,381	43,198	1,726	6,542	5%	18%
D	ALYs averted	3,784,398	3,965,052	4,264,948	180,654	480,550	5%	13%
remental M	faternal & infant healthcare costs averted	119,616,819	125,249,365	140,965,490	5,632,546	21,348,671	5%	18%
t. U	Inmet Need	12.80%	10.05%	5.05%	(0)	(0)	-21%	-61%
ctiveness	otal FP costs	86,648,476	91,266,983	80,794,920	4,618,507	(5,853,556)	5%	-7%
C	ost-benefit ratio	1	1	2	(0)	0	-1%	26%
T	otal users	10,656,021	11,180,281	12,133,481	524,260	1,477,460	5%	14%
C	ondom users	564,769	592,555	956,167	27,786	391,398	5%	69%
In	ajectable users	1,513,155	2,434,109	1,776,247	920,954	263,092	61%	17%
Pi	ill users	7,523,151	7,046,769	5,861,651	(476,382)	(1,661,499)	-6%	-22%
M	fale sterilization users	0	0	133,231		133,231		
E	emale sterilization users	202,464	212,425	237,198	9,961	34,733	5%	17%
	JD users	31,968	33,541	2,014,879	1,573	1,982,910	5%	6203%
In	nplant users	490,177	514,293	777,971	24,116	287,794	5%	59%
SI	tandard Days Method (SDM) users	0	0	0	-	-		
0	ther modern users	95,904	100,623	109,201	4,718	13,297	5%	14%
A	Il traditional users	234,432	245,966	266,937	11,534	32,504	5%	14%
M	fale sterilization acceptors *	0	0	0	-	-		
E	emale sterilization acceptors *	43,065	0	0	(43,065)	(43,065)	-100%	-100%
11	JD acceptors *	7,191	7,876	901,146	686	893,955	10%	12432%
In	nplant acceptors *	0	0	0	-	-		
s	DM acceptors *	0	0	0				

• 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.

ImpactNOW	Configuration	Inputs		Set Policy Goal	s	Outputs		\Rightarrow
_			CPR	Analysis			Previous	Forward
Indicator Analysis				ſ	Incremental	difference to Usual	Percentage	e difference d to Usual
	Indicator	llsual	Scen2	Scen3	Scen2	Scen3	Scen2	Scen3
Summary	Unintended pregnancies averted	2 627 450	2 751 172	3 096 385	123 722	468 935	5%	18%
Tables	Births averted	1 816 953	1 902 511	2 141 235	85 557	324 282	5%	18%
	Abortions Averted	375 904	393 605	442 994	17 701	67 090	5%	18%
Sconstin	Unsafe Abortions Averted	359 966	376 917	424 212	16 950	64 245	5%	18%
Comparison	Maternal deaths averted	10.398	10.925	9,296	527	(1.101)	5%	-11%
comparison	Infant deaths averted	36.655	38,381	43,198	1.726	6.542	5%	18%
	DALYs averted	3,784,398	3,965,052	4,264,948	180.654	480.550	5%	13%
Incremental	Maternal & infant healthcare costs averted	119.616.819	125,249,365	140,965,490	5.632.546	21.348.671	5%	18%
Cost	Unmet Need	12.80%	10.05%	5.05%	(0)	(0)	-21%	-61%
Effectiveness	Total FP costs	86.648.476	91,266,983	80,794,920	4.618.507	(5.853.556)	5%	-7%
	Cost-benefit ratio	1	1	2	(0)	0	-1%	26%
	Total users	10,656,021	11,180,281	12,133,481	524,260	1,477,460	5%	14%
	Condom users	564,769	592,555	956,167	27,786	391,398	5%	69%
	Injectable users	1.513,155	2,434,109	1,776,247	920,954	263.092	61%	17%
	Pill users	7,523,151	7,046,769	5,861,651	(476,382)	(1,661,499)	-6%	-22%
	Male sterilization users	0	0	133,231		133,231		
	Female sterilization users	202,464	212,425	237,198	9,961	34,733	5%	17%
	IUD users	31,968	33,541	2,014,879	1,573	1,982,910	5%	6203%
	Implant users	490,177	514,293	777,971	24,116	287,794	5%	59%
	Standard Days Method (SDM) users	0	0	0	-	-		
	Other modern users	95,904	100,623	109,201	4,718	13,297	5%	14%
	All traditional users	234,432	245,966	266,937	11,534	32,504	5%	14%
	Male sterilization acceptors *	0	0	0	-	-		
	Female sterilization acceptors *	43,065	0	0	(43,065)	(43,065)	-100%	-100%
	IUD acceptors *	7,191	7,876	901,146	686	893,955	10%	12432%
	Implant acceptors *	0	0	0	-			
	SDM acceptors *	0	0	0				

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."

ImpactNOW	I		Configuration		Ir	nputs		Set Policy Go	pals	Outpu	uts	
						(PR.	Analysis	i			Previo
Indicator Analysis		\$5.000.000			Co	osts vs. Ou	utcom	nes				
Summary Tables		\$4,000,000						•	•		◆ U	sual
Scenario Comparison		\$1,000,000 \$1,000,000 \$-	- 500,000		1,000,000	1,500,000	2,000,00	0 2,500,000) 3,000,000) 3,500,0	= Sc ▲ Sc 100	cen2 cen3
Incremental Cost	Ъ	Outcome	Unintended preg	nancie	saverted	Outcon	nes					
Effectiveness			Program		FP Costs	Outcomes	Increme	ental FP Costs	Difference in 2	Koutcome	ICER	
·			Usual	\$	3, 784, 398	2,627,450						
			Scen2 Scen3	\$	3,965,052 4,264,948	2,751,172 3,096,385	\$	180,654 480,550		123,722 468,935	\$ 1 \$ 1	
			* Acceptor result	s are ex	opressed as the	e average annu	al numb	er of acceptors o	ver the course	of the period	of analys	iis.

• 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.

mpactNOW		Configuration		Inj	outs	-	Set Policy G	ioals		Outpu	ts	
					C	PR A	analysi	s				Previou
Indicator Analysis				Co	sts vs. Ou	itcom	es					
iummary fables	\$5,000,000 \$4,000,000 \$3,000,000							•	-		◆ U sual	
icenario Comparison	\$2,000,000 \$1,000,000 \$-	50.000	100.000	150.000	200.000	250.000	200.000	250.000	400.000	450.00	Scen2	
ncremental		- 50,000	100,000	150,000	Outcor	230,000 nes	500,000	550,000	400,000	450,00		
Cost Effectiveness	Outcome	Unsafe Abortions A Program	verted	P Costs	Outcomes	Incremen	ital FP Costs	Difference	e in X outo	come	ICER	
		Usual Scen2	\$ \$	3,784,398 3,965,052	359,966 376,917	Ś	180,654			16,950	\$ 11	
		Scen3	ŝ	4,264,948	424,212	\$	480,550			64,245	\$ 7	

• 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\$7 invested in family planning.

- Next, select "Infant Deaths Averted" from the yellow drop-down menu. Please interpret the following ICER:
 - The ICER tells us that by making an ambitious policy goal, one that aspires to increase contraceptive prevalence and decrease maternal deaths by 2020, we could

Answers found at the end of this exercise.ⁱⁱⁱ

i. Task 4.2, Answers:

- o Usual = 414,693
- o Scen2 = 457,648
- o Scen3 = 564,147
- o Which scenario averted the most unintended pregnancies in 2020? Answer: Scen3

ii. Task 4.2, Answers:

- o Usual = 5,785
- o Scen2 = 6,385
- o Scen3 = 7,870
- Which scenario prevented the most infant deaths in 2020? **Answer**: Scen3

iii. Task 4.5, Answer:

The ICER tells us that by setting an ambitious policy goal, one that aspires to increase contraceptive prevalence and decrease maternal deaths by 2020, we could avert one infant death for each US\$73 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

Health Policy Project Futures Group 1331 Pennsylvania Ave NW, Suite 600 Washington, DC 20004 Tel: (202) 775-9680 Fax: (202) 775-9694 Email: policyinfo@futuresgroup.com www.healthpolicyproject.com