A Planning and Advocacy Tool for Strengthening Family Planning Programs

User's Guide

Version 2

USAID
FROM THE AMERICAN PEOPLE

THE respond PROJECT

The RESPOND Project
c/o EngenderHealth
440 Ninth Avenue
New York, NY 10001 U.S.A.
Telephone: 212-561-8000
Fax: 212-561-8067
e-mail: info-respond@engenderhealth.org
www.respond-project.org

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CONTENTS

Appendixes

ACRONYMS AND ABBREVIATIONS

CDC	U.S. Centers for Disease Control and Prevention
CPR	contraceptive prevalence rate
CYP	couple-years of protection
DHS	Demographic and Health Survey
ICPD	International Conference on Population and Development
IUD	intrauterine device
JSI	John Snow, Inc.
LA/PMs	long-acting and permanent methods of contraception
MICS	Multiple Indicator Cluster Survey
MWRA	married women of reproductive age
NGO	nongovernmental organization
PATH	Program for Appropriate Technology in Health
PIO	public international organization
RHS	Reproductive Health Survey
RHSC	Reproductive Health Supplies Coalition
SDM	standard days method
UN	United Nations
UNFPA	United Nations Population Fund
USAID	U.S. Agency for International Development
WRA	women of reproductive age

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INTRODUCTION

Quality data are critical for advocating for funding to meet family planning program needs, setting program goals, and identifying the human and material resources necessary to meet those goals. Projecting contraceptive use is essential for setting realistic yet ambitious family planning service goals and planning for the resources a program will require in the future. Sound programming requires data so that the goals and activities selected are appropriate and evidence-based. But family planning program designers, managers, and implementers are often not equipped with the data or tools needed to make realistic programming decisions.

Reality √ is an easy-to-use Excel-based tool developed by The ACQUIRE Project and EngenderHealth that can be used to generate data for evidence-based advocacy and strategic planning. The tool can be used to set realistic family planning goals, plan for service expansion to meet program objectives, and evaluate alternative methods for achieving specific goals. The Reality √ tool helps users plan based on informed estimates of contraceptive need, and thus it can be used as an important advocacy tool for illustrating both unmet need as well as the inputs required to achieve set goals. A key feature of the tool is that it enables users to quickly test future scenarios for a program, including whether current goals are achievable or feasible. It can help managers better understand the costs of continuing to rely on a particular method in a program, as well as the potential benefits of expanding the method mix to promote use of more effective contraception.

The tool was also designed to be a stand-alone product that could be used in low-resource settings, where high-capacity Internet connections or high-level programming skills may not be available. Anyone with basic Excel skills will be able to use the tool. Beneficiaries of the tool could include planners and administrators from Ministries of Health and other key agencies at the national, provincial, or district levels, as well as family planning programmers at donor agencies or cooperating agencies.

This User's Guide sets forth instructions and the methodology for projecting family planning trends and instructs a user on how to apply the tool. It is written for self-teaching and can also be used as a teaching aid for group training. The complete Reality √ package consists of the User's Guide and an accompanying CD-ROM. The CD-ROM contains an electronic version of the guide, the Reality √ Excel example used in this guide, and a blank Reality √ template that you can use for your own projections. The CD-ROM also contains additional resources, primarily electronic copies of the resources used for this guide, tools for estimating population of women of reproductive age, and United Nations population files that can aid in projecting future populations.

I. OVERVIEW: WHAT IS REALITY √ AND WHAT CAN IT DO FOR YOU?

Statement of Purpose

Reality √ is a family planning tool that can be utilized to generate data for evidence-based advocacy and planning. The tool can be used to set realistic family planning goals, plan for service expansion to meet program objectives, and evaluate alternative methods for achieving specific goals. Reality √ allows users to assess past trends in the contraceptive prevalence rate (CPR), to test future scenarios for the geographic area in which their program is operating, and to test whether established goals are reasonable for the local context in which they are working.

Background

Projecting Family Planning CPR Goals and Planning Realistically

Projecting overall CPR and method-specific prevalence rates is essential to advocating for investment in family planning, evaluating current family planning program efforts, setting goals for the future, and planning realistically for the resources the program will require. But program managers often are not equipped with the figures or tools needed to make realistic programming decisions. Sound programming requires data, so that the goals and activities selected are appropriate and evidence-based. Projecting CPR is an art, not a science, but utilizing projections as part of the decision-making process helps to establish realistic yet ambitious programming goals and contributes to the planning process for how to meet these goals. It is important to note that the quality of the projections (output) is closely tied to the quality of the data entered (input) and to the validity of the assumptions made. To generate reliable projections for a program, one should have good knowledge of the program and be aware of aspects of the program that may change and affect contraceptive demand or use.

Need for Local, Context-Specific Projections

Projection software is sometimes used to estimate future CPR at the national level, but the same type of projections cannot necessarily be made at the regional or district levels. There is a real need to project family planning goals and needs at subnational levels, to improve programming processes and family planning program results. Often, significant regional differences in family planning usage exist within a given country and should be reflected in both program design and resource allocation. Reality √ builds on existing demographic national-level family planning projection tools such as Spectrum/FamPlan to project CPR and user, commodity and supply, and service needs at the regional, district, and site levels (Stover et al., 2006).

What Is Reality √ and What Can It Do for You?

Reality √ is a tool consisting of a simple Excel workbook that generates data for decision making; it allows one to assess past CPR trends and test future scenarios for the geographic area in which a program is operating. The tool uses demographic data to project the number of contraceptive users over a set time period, and based on that information, it can calculate the number of adopters (new

users), commodity and supply needs and costs, service delivery capacity, and couple-years of protection (CYP).[1] A user can test and assess whether established goals are reasonable for a particular context, given the human or financial resources available. The tool was designed with the end user in mind, making it easy to generate data for decision making. The tool can be used nationally and subnationally in the health system. It is designed to be rolled out and replicated in diverse settings, particularly in low-resource settings where other forecasting tools are not available.

A key feature of the tool is that it enables users to quickly test multiple "what if" scenarios for a program. It can help managers better understand the costs of continuing to rely on a particular method in a program, as well as the potential benefits of expanding method mix to promote the use of more effective contraception. It can illustrate how reducing discontinuation affects the number of adopters, commodity and supply needs, and service delivery capacity.

Reality √: It's Not about Targets, It's about Planning

Informed and voluntary decision making is a pillar of quality family planning services and a basic tenet of the fundamentals of care. Clients' right to freely choose the family planning method they want to use to achieve the desired number and spacing of their children is widely recognized. The right to choose implies that the client is not being pressured or coerced to accept family planning or to use a particular method. It also implies that a range of methods is available from which the client can choose without constraint. For clients to exercise this right, they need accurate information that they can understand, access to trained health care professionals with good communication and counseling skills, and a social context that supports them in making decisions about their fertility and reproductive health that meet their needs.

In developing goals or targets for contraceptive prevalence in a population, one must be very careful not to compromise individual clients' rights to voluntary and informed choice. Though numerical goals are important for realistic planning and budgeting, they should not be passed down to individual health care workers as targets or quotas that they are required to meet as part of their performance expectations. Doing so compromises the quality of services and jeopardizes the client's voluntary choice by creating a provider bias for or against specific methods.

Reality √ is a planning tool to help policy makers and managers understand what is realistic within the limits of existing resources, to estimate the potential impact of family planning on certain reproductive health outcomes, and to project what additional resources will be needed to serve the estimated number of family planning clients at future points, based on what is known about the population and the unmet need for services. The results should be used to project resource requirements and to advocate for and deploy them, but not to set individual targets for health service providers. Not only would this compromise the quality of services, it would also violate the terms and conditions of USAID funding, as stipulated in the Tiahrt Amendment (USAID, 2009). This U.S. law prohibits the use of any numerical targets or quotas of total numbers of births, of family planning acceptors, or of acceptors of a particular family planning method (though it permits quantitative estimates or indicators used for budgeting or planning purposes). The Tiahrt Amendment applies to any U.S. nongovernmental organization (NGO), foreign NGO, public international organization (PIO), or foreign government receiving funds, technical assistance, commodities, or training from any U.S. government account for family planning activities.

[1] CYP is the amount of contraception necessary to protect one couple from pregnancy for one year, based upon the volume of all contraceptives sold or distributed to clients during that year.

- **Sample Questions That Reality √ Can Help Answer:**
  - If past contraceptive prevalence trends continue, where will we be in 2015?
  - The Ministry of Health has set a goal of 30% modern method prevalence by 2015. Is this achievable? What human and material resources will be required to achieve this goal?
  - How many intrauterine devices (IUDs) will have to be inserted per service site to obtain a 1% IUD prevalence?
  - How much would reducing discontinuation affect the numbers of users and commodities needed to reach a target?
  - If you have a high unmet need for family planning, what will be required to meet 50% of that need?
  - The national program is adding Sino-implant (II) to the method mix. If we have 100,000 adopters a year, how many removals can we expect annually?

Uses of Reality √

The Reality √ tool helps you plan based on informed estimates of need, by examining the relationship of contraceptive prevalence to contraceptive users, adopters, implant removals, commodities, commodity and supply costs, and service delivery capacity, based on the number of women of reproductive age (WRA) or married women of reproductive age (MWRA) in a given geographic area. When testing potential future scenarios, Reality √ can also generate estimates of adverse reproductive health outcomes (unintended pregnancies, abortions, unintended births, and maternal, infant, and child deaths) that could be averted if the target method mix and CPR were to be achieved. This type of local, specific information is crucial in evaluating whether CPR goals are achievable and in advocating for the resources needed to actually achieve these goals.

The tool is set to run projections based on simple assumptions for estimating family planning usage and needs. It is important to note that these data are intended to illustrate trends for future family planning programs; they are only intended to be used to set goals for the purposes of planning, not to set performance targets. The projections are only estimates based on an established methodology and can provided a basis for predicting future family planning needs. Several other USAID-funded tools can be used as complements to Reality √. These include the FamPlan module of the previously discussed Spectrum, which was developed by the Policy Project (Futures Group International); CastCost, developed by the U.S. Centers for Disease Control and Prevention (CDC); and PipeLine, developed by the DELIVER Project (JSI) (Bagga et al., 2009).

Reality √: Getting Acquainted with the Tool

The Reality √ tool consists of an Excel workbook containing two basic worksheets:

1. Past Trend Continuation
2. Future Goals

Customizable graphs corresponding to each worksheet are also generated in separate sheets.

Each worksheet contains set formulas to minimize the amount of data you will have to input to examine either a past trend or a projected future scenario.

The only software you will need is Microsoft Office, specifically Microsoft Excel. While this guide will help you to navigate the process of inputting data and analyzing the projections, basic Excel skills are needed. Skills such as knowing how to move through a worksheet, how to save files, how to copy a

workbook and worksheet, how to print, how to hide columns and rows, or how to copy and paste data into a Microsoft Word file will come in handy when you use the Reality √ Tool. Appendix C: Excel Functions: Tips on Using Excel (page 81) provides instructions on the multiple Excel functions used in the Reality √ tool.

The worksheets have been color coded to help guide you through the process.

- The only cells in which you need to input data are the green cells.

The rest of this guide will help you to use the actual Excel file.

- The visual illustrations contained in the guide have been enlarged or reduced for this guide; you will have complete control over how you view the Reality √ Excel file when you are using it on your computer. In some images, you will see a blue line denoting cells linked to a formula; this helps direct your attention to the appropriate cells in the visual, but these lines will not appear on your screen when you use the actual tool.

While this guide will direct you on how to use the Reality √ tool to input data and generate projections, each section also contains additional information and illustrative questions that can help you interpret the projections and think about them in a larger programmatic context.

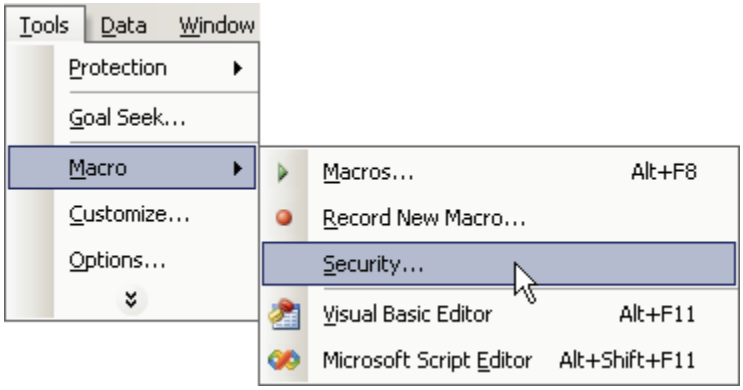
To follow along with the examples in the guide, you need to look at the Excel file on your computer as you read. Looking at the Excel worksheets in their entirety also helps provide context on the data that are captured within the worksheet. The Reality √ Excel file contains two different Excel worksheets—the first calculates method-specific prevalence at a future point in time if prevalence (past trend) continues; the second worksheet allows you to set a future prevalence goal (scenario) and see what it will take in terms of users, adopters, and commodities to meet this goal and what the potential impact of doing so might be. While you do not need to examine your past trend calculations first, this will help provide insight into how your program has performed and will also illustrate the effects of a simpler extrapolation into future years. After that, you will be able to test future scenarios.

Enabling Macros

Before you begin to work with Reality √ or any of its accompanying tools, you must enable macros in Microsoft Excel. Macros are stored series of commands and functions that automatically run to perform a specific task; these are embedded into the tools to simplify several aspects of navigating the sheets. Without macros enabled, Reality √ will still function; these are included to simplify the data entry process for the user. The customizable graphs and population calculators will *not* function if macros are not enabled.

Follow these steps to enable macros in Excel on your computer with Office 2003:

1. Open a blank Excel workbook.
2. In the Tools menu, select Macro, then Security.
3. Select the "Medium" security option, then select OK.
4. Close the Excel workbook.



5. Open the Reality √ workbook.
6. A grey box will ask you whether you want to enable or disable macros. Select "Enable macros."

You will *not* need to perform steps 1 through 4 each time you use the tool, unless you switch to a different computer.

For users of Office 2007 or 2010:

1. Open a blank Excel workbook.
2. Click the Microsoft Office Button. 
3. Select Excel Options.
4. In the Trust Center category, click Trust Center Settings, and then click the Macro Settings category.
5. Select the "Medium Security" option.
6. Select "OK," then close the Excel workbook.
7. Open the Reality √ workbook.
8. A grey box will ask you whether you want to enable or disable macros. Select "Enable macros."

You will *not* need to perform steps 1 through 6 each time you use the tool, unless you switch to a different computer.

1. Past Trend Continuation Worksheet

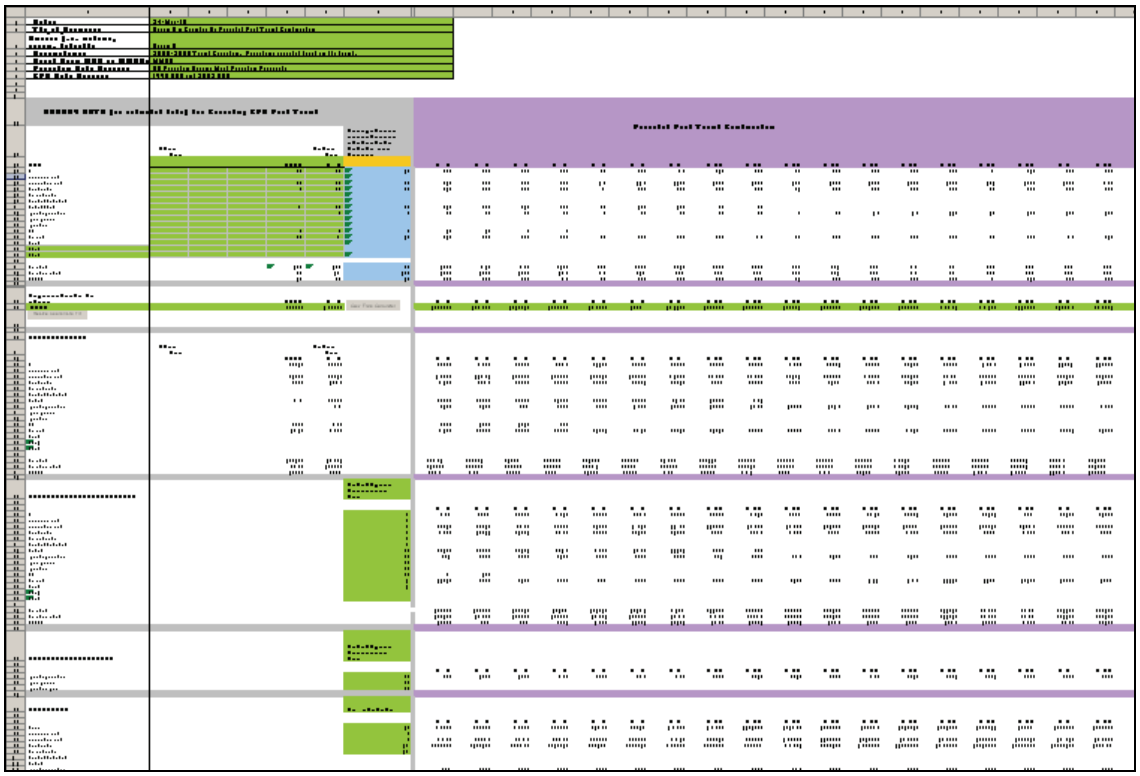
To project contraceptive prevalence into the future based on your past trend, or to know whether future CPR goals are realistic, it helps to first assess *where you have been*:

- How has prevalence by method changed over time?
- What would the future total prevalence be in year X *if* the trend were to continue?

The above questions can be answered by calculating your past trend; this is done in Worksheet No. 1: *Past Trend Continuation*. This worksheet will calculate past CPR trends based on 2–5 data points and project those trends to continue for up to 25 years into the future. By inputting 2–5 data points, you can use the worksheet to capture a basic trend during a specific time period.

> ***Note:*** The *Past Trend Continuation* worksheet will project the trend for a period of 25 years beyond the most recent data point entered. However, the further out one projects, given the linear nature of the model, the less reliable the numbers become. Uncertainty in the projections increases as the period of the projections increases; this worksheet is only intended to provide an estimate of where programs would be at a point in the future *if* trends that have occurred in the past continue. It is *not* an exact prediction of future trends, as many factors may change.

The image on page 8 is an extremely reduced image of the *Past Trend Continuation* worksheet and is included here to provide a quick, big-picture visual to help explain the file's overall set-up. It does not represent the size of the fields you will see in Excel; the image is included here simply to give you an idea of how the worksheet is organized.



Notice that while this file may at first seem complex, all of the cells are linked and contain formulas that automatically update once you input your data into the green cells. The green cells contain figures such as CPR, population data, and commodity and supply costs.

The color coding can help make sense of what you are seeing.

- As noted, the green cells are the only cells in which you have to input data.
- The spreadsheet area demarcated by the grey border to the left contains the main information used for calculating the projections. The purple area indicates the area where future projections are calculated. The spreadsheet is formulated to instantaneously run calculations and projections as you input the necessary data. All cells, with the exception of the green ones, contain formulas used for the projections. The formulas in the worksheet are locked, to minimize mistakes.

The basic indicators (outputs) that the *Past Trend Continuation* worksheet can project are:

- CPR
- Population data for the number of women or number of married women
- Number of users
- Number of adopters
- Number of implant removals
- Commodities
- Costs[2]
- Service provision
- CYP

[2] Only commodity costs are included as default values in Reality √, but users can enter per-unit total service costs, if available, to calculate the total costs of providing services.

The data inputs required to generate these basic indicators are:

- Method-specific CPR data for 2–5 years
- The population of WRA or MWRA for all years of interest
- CYP
- Discontinuation rates
- Commodity and supply or total service costs

> ***Note:*** Default method-specific values are provided for the final three, but you can enter country-specific values if these are available.

Optional service provision outputs that one can generate are:

- Estimated number of clients per facility per month
- Estimated number of implant removal clients per facility per month

These require you to input the following:

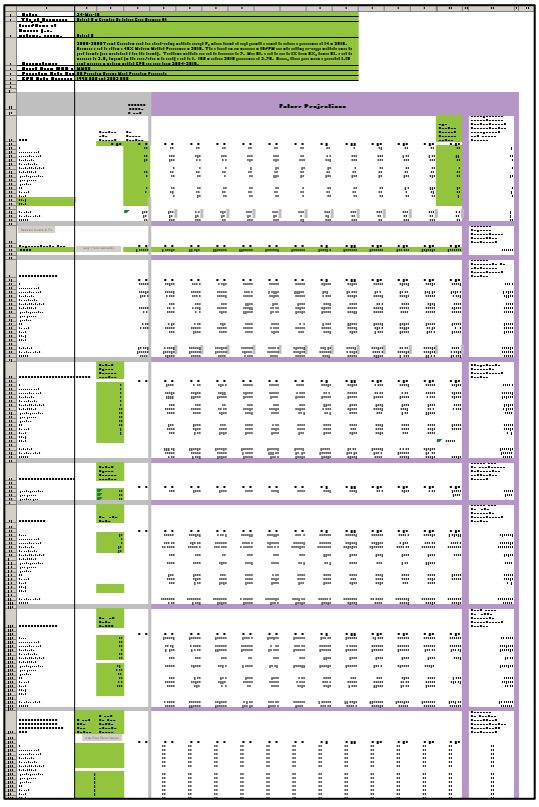
- Numbers of facilities in the geographic area of interest that are able to provide each method
- Estimated number of annual client visits for each method

Before proceeding, navigate the *Past Trend Continuation* Excel worksheet to get a better sense of how it is set up.

2. Future Goals Calculation File

You may want to test family planning projection scenarios for a multitude of purposes, such as:

- Planning for future needs to determine what CPR goals mean in terms of numbers of users, of commodities, or of sites that will be required to serve clients
- Assessing whether previously established goals are realistic or what kind of resources will be needed to meet these goals
- Identifying the potential impact of achieving a target CPR and method mix
- Advocating for more resources at the national level or from donors
- Analyzing how to optimize family planning resources for maximum impact and how to obtain estimates for future resource allocation (For purposes such as this, you can use the *Future Goals* worksheet.)



To the right is a reduced image of the *Future Goals* worksheet in its entirety; again, this is included to provide an overview of how that worksheet is set up.

You can see that it is very similar to the *Past Trend Continuation* worksheet. As in that worksheet, the only cells in which data have to be input are the green cells.

Similar to the *Past Trend Continuation* worksheet, the indicators that the *Future Goals* worksheet can project are:

- CPR
- Population data for the number of women or number of married women
- Number of users
- Number of adopters
- Number of implant removals
- Commodities
- Costs
- Service provision
  - Estimated number of clients per facility per month
  - Estimated number of implant removal clients per facility per month
- CYP

In addition, the *Future Goals* worksheet can project the following impact indicators:

- Unintended pregnancies averted
- Abortions averted
- Unintended births averted
- Maternal deaths averted
- Infant deaths averted
- Child deaths averted

Required data inputs to generate these impact indicators are:

- Country-specific or regional abortion ratios
- Country-specific maternal mortality ratios
- Country-specific infant mortality rates
- Country-specific child mortality rates
- Method-specific failure rates
- Pregnancy rates
- Spontaneous abortion rates

Note: Default method-specific values are provided for the final three, but you can enter country-specific values if these are available.

This worksheet contains the same level of analysis as the *Past Trend Continuation* worksheet, with the addition of the impact calculations. Be sure to take an opportunity to examine this file to get a better sense of how it is set up.

Now that you have an overview of the tools, you can start to run projections.

II. GETTING DOWN TO BUSINESS: USING REALITY √ TO GENERATE PROJECTIONS

What Do I Need to Begin?

For any level of projection that you would like to run (national, regional, district, or site), you will need:

- Two to five years[3] of CPR data points (with data segregated by method)
- Population data

CPR Data

- CPR data may come from sources such as the Demographic and Health Survey (DHS), Multiple Indicator Cluster Survey (MICS), or Reproductive Health Survey (RHS). You can run projections on either women of reproductive age (WRA) or married women of reproductive age (MWRA); therefore, you will need to ensure that you use CPR data corresponding to the level of projection you would like to run (i.e., CPR figures for WRA or for MWRA).
- Estimated data can also be used when actual data are not available: If you have one data point for the past and you have a reasonable estimate for the current CPR, you can utilize estimated data for the second data point. (You need to make sure to document the rationale for your estimate.)
- You can also utilize data from another nation or region that has a similar profile to the geographic area on which you would like to focus. Please keep in mind that regional estimates or some other data can be used as your starting point and that you can adjust the CPRs you input based upon how you think your program has done. The tool was designed to give you, the user, as much flexibility as possible, based on the data or estimates that are available.

All CPR figures in the spreadsheet have been rounded to the second decimal place. This allows for easy display and computation and keeps enough precision for the projections.

Population Data

Depending on the level of analysis you choose, population data on numbers of WRA or MWRA are needed for Reality √ projections. If you have them, local-level population projections (such as projected census data) can be used here. If not, a commonly used source of population projections is the *United Nations World Population Prospects* Database. The Reality √ CD-ROM contains tools to help you calculate the population of WRA or MWRA; see the assumptions underlying the population estimates on pages 73–78 of this guide. You can also use information from the U.S. Census Bureau for population projection estimates.

[3] For calculating a continuation of a past trend, one can input up to five data points. A minimum of two are required.

Running the Projections

1. Calculating Past Trends

Before you jump into testing future scenarios, it is advisable to calculate past trends, to help give you a sense of how the family planning program has performed to date. While you can certainly test future scenarios (i.e., run projections on the *Future Goals* worksheet) without calculating past trends, the past trend figures will help you assess what may be realistic for the future of your program, based on historical trends; it will also help provide context before you begin to run future scenarios.

Detailing Source Data and Assumptions

On your computer, open the worksheet labeled *Past Trend Continuation.* Be sure that you have enabled Macros in Excel by following the steps listed on pages 6–7 of this guide. In the top left-hand corner, you will see seven fields of information that are critical to input (see below), to ensure that you are able to remember all of your source data and assumptions. This will help you to follow the work you are doing in the spreadsheet and will also help others understand exactly what the projection is based on.

	A	B C D E F G H I
1	**Date:**	24-May-10
2	**Title of Scenario:**	Region X in Country X: Projected Past Trend Continuation
3	**Geographic Level/Name of Analysis (i.e. national, region, district):**	Region X
4	**Assumptions:**	2000-2005 Trend Calculation. Projections calculated based on this trend.
5	**Based Upon WRA or MWRA:**	MWRA
6	**Population Data Source:**	UN Population Division: World Population Prospects
7	**CPR Data Source:**	1998 DHS and 2003 DHS

Source Data and Assumptions That You Have to Input

1. **Date**
   - In this field, you should note the date on which you are working on the file. It may also be helpful to note the initials of the original creator of the file.
2. **Title of Scenario**
   - Label and name the scenario to make it easy to refer back to it. The title may contain information such as the country or district name and the nature of the projection (i.e., Region X in Country X: Projected Past Trend Continuation).
3. **Geographic Level/Name of Analysis (i.e., National, Regional, District-Level)**
   - This field will allow you to specify the geographic area of your projections. For example, if you are running national-level trends, you can enter *National*; however, if you are running the data on a specific region, district, or site, it is important to note the proper name within this field.
4. **Assumptions**
   - Detailing the assumptions is crucial to knowing what the data are based upon.
   - The example notes that the 1998–2003 trends are being calculated and are a basis for projecting into the future.
   - It is very important to note that year-to-year changes can be projected in various ways; this tool projects based upon an *average* annual increase or decrease (slope).

5. **Based upon WRA or MWRA**
   - In this field, it is important to note whether you are basing your projections on populations of WRA or MWRA. This will ensure that anyone looking at the file understands which CPR trends are being analyzed and also which population numbers are being utilized for the projections.
6. **Population Data Source**
   - This field will capture information on the source of the WRA or MWRA data used.
   - The example shows that the numbers utilized in this file came from the *United Nations Population Division World Population Prospects,* which is the source of the data in the National Population Calculator included on the CD-ROM. If you obtain your data from an Internet page, you should reference the web site and the date on which you accessed the information.
7. **CPR Data Source**
   - Here, you will want to note the source(s) of the CPR data.
   - In this example, we can see that 1998 and 2003 DHS data are being used. Be as specific as possible regarding your sources. If, for instance, you use service statistics for a specific district to estimate your CPR, be sure to note the time period for which the service statistics apply. If you are using another source, such as the RHS, be sure to note that information in this field.
   - Entering this information in every worksheet you use will help you and others refer back to the original sources. This information is also critical in explaining what the projections illustrate.

CPR Survey Data

Now that you have completely filled in your background data and assumption fields, it is time to begin to input *the numbers*. This section will guide you as to where to input data and will illustrate the formulas and projections that result from your data inputs. Again, for clarity, be sure to continuously look at the Excel file on your computer screen to get a better sense of the worksheet as you read this guide.

The figure on page 14 shows cells that require your data input for calculating the past trend. As previously noted, the green cells are the only cells throughout the Reality √ tool into which you will input data. It is important to keep this in mind, as most of the other cells within the worksheets contain formulas that link back to the green cells. Also, although the tool allows you to enter up to five CPR data points per method, only two are required.

Note: There is no precise formula for determining the number of data points to enter. Consider the factors that have driven FP trends most recently when determining whether to use two, three, four, or five data points. For example, if you have data from 1990, 1994, 1999, 2003, and 2007, do you think that the factors driving change between 1990 and 1994, 1994 and 1999, and 1999 and 2003 are still occurring today? If so, these five data points should be included. If you think that factors that began in 1999 are most reflective of trends today, include only the three most recent data points.

Determining which trends to project to continue is an art form; there is "right way." However, projecting the continuation of past trends is *not* the main purpose of Reality √, and past trends are often not continued into the future (programs end, demand shifts, etc.). The *Past Trend Continuation* worksheet in Reality √ is just to help you to get a sense of where your program has been and where it might be *if* it continues to grow at the rate at which it has in the past.

We can see that this section of the worksheet contains information on *Survey Data (or Estimated Data) for Calculating CPR Past Trend*. Column A contains the labels for individual methods. Columns B through F are the sections of the worksheet where CPR data points for each method will be entered.

	A	B	C	D	E	F
12		First Data Point				Last Data Point
13	**CPR**				**1998**	**2003**
14	Pill				2.60	3.20
15	Injectable - two-month					
16	Injectable - three-month				2.50	6.40
17	Male Condom				0.80	1.90
18	Female Condom					
19	Standard Days Method					
20	Any Trad. or Folk				7.00	4.60
21	Implant - Norplant, Jadelle				0.00	0.30
22	Implant - Implanon					
23	Implant - Sino-implant (II)					
24	IUD				0.40	0.20
25	Female Sterilization				1.40	2.00
26	Male Sterilization				0.00	0.00
27	Other 1					
28	Other 2					
29						
30	Any Method	-	-	-	14.70	18.60
31	Any Modern Method	-	-	-	7.70	14.00
32	All LA/PMs	-	-	-	1.80	2.50

We know from the background data previously detailed that the trend being calculated is based on MWRA and that the data came from the DHS; therefore, the numbers in column E are based on the CPR for MWRA from the 1998 DHS and the numbers in column F are based on CPR for MWRA from the 2003 DHS. (If you choose to base the projection upon WRA, you must be sure to enter the CPR figure for all women, not just for married women.)

Reality √ has the capacity to project figures for a number of methods:

- Pill (oral contraceptives)
- Two-month injectable
- Three-month injectable
- Male condom
- Female condom
- Standard days method (also known as SDM or CycleBeads)
- Any traditional or folk methods
- Hormonal implants (Norplant®, Jadelle, Implanon, or Sino-implant (II))
- IUD
- Female sterilization
- Male sterilization
- Two "other" methods of your choice (Note that Reality √ does not provide default CYP, cost, or discontinuation data for these categories.)

It is possible that you will not have data for every method listed; this could be due to the fact that the method is not available in your geographic area or that the method is too new for data on it to be available. It is important to keep in mind that while these options are available in Reality √, you only have to input figures for the methods that are applicable to your program. The tool has been designed to allow for this type of flexibility, so it can meet the needs of multiple users.

Also, note that only two data points (i.e., data for two different years) are required. However, if you have access to up to five data points, Reality √ will generate a line of best fit to project trends between the data points. CPR data for previous years, if available, can create a more nuanced projection that considers past trends when calculating future CPR.

CPR Data That You Have to Input

1. Column F contains the *Last Data Point*. Input the year of your most recent data point (Cell F13). In this example, 2003 was chosen for the most recent year.
2. Using the CPR data from your source, input method-specific CPRs for your most recent year (Cells F14–F28). Each figure shows the *percentage of WRA or MWRA using that method*. For any method for which you do not have data, you can either leave the corresponding green CPR cell blank or enter 0.
3. Input the year of your second-most-recent data point (Cell E13). In the example here, 1998 appears as the earliest year for which CPR data were accessible.
4. Using the CPR data from your source, input method-specific CPRs for the second-most-recent year (Cells E14–E28).
5. If you have access to more than two data sets, follow these steps to enter your additional data and their corresponding years.

> ***Note:*** The CPR data may be entered in any order that you prefer. However, you may find it most convenient to enter your data in chronological order, with the most recent year on the right, in Column F, and the older data in ascending order, with the oldest starting at the left (Column B) and the most recent on the right. Also, the years of the data sources *must* be entered into the green cells at the top (B13 through F13, if you have five data points); the calculator considers the difference between these years when projecting CPR trends. If they are left blank, no calculation will be performed.

As mentioned earlier, it is not necessary to have data for every method listed in Reality √; for methods with no data, you can input the number 0 into the appropriate cells or simply leave them blank. You will also notice that there are multiple options for the injectable (Row 15 is for the two-month injectable, and Row 16 is for the three-month injectable); given that many programs have both options available, the tool allows you to project based on both types of injectables. The same is true for implants: Row 21 is for Norplant or Jadelle (given that Norplant will not be on the market in the future), while Row 22 is for Implanon and Row 23 is for Sino-implant (II). Again, providing multiple options for both injectables and implants offers flexibility for the individual user.

Given that there are two options in Reality √ for the injectable and three for the implant, you can choose which fields you want to use and how to input those data. For example, if you are using a DHS survey that gives you one CPR figure for injectables (e.g., 10%) and you know that about half of that use is due to the two-month injectable and about half is due to the three-month injectable, then you can input "5" into cell F15 and "5" into cell F16. Alternatively, if the injectable CPR is 10% and you know that this is due solely to the three-month injectable, you would then input "10" into Cell F16. Keep in mind that it is up to the Reality √ user to decide which fields to use.

For the purposes of this guide, for simplicity the three-month injectable is used as the injectable example and Norplant/Jadelle is used as the implant example.

If you have data on another method or methods of interest, feel free to enter those data in the "Other" fields in Rows 27 and 28. Note that Reality √ will not provide data for commodity and supply costs, CYP, or discontinuation rates for the "Other" entries; you will have to enter your own values into the corresponding green cells throughout the worksheet. You can also change the labels from "Other 1" and "Other 2" to the specific names of the other methods.

When using survey data (such as the DHS or RHS), always check to ensure that you are using the correct numbers. As indicated above, if your projection is to be based on MWRA, ensure that you are inputting the CPR for MWRA and not for all WRA. It is also critical to double-check all of your numbers for accuracy. Given that the spreadsheet formulas are linked to the figures you input and will automatically calculate projections, even small inaccuracies will result in faulty projections.

CPR Summary Information

Under the list of methods, there are three summary categories; based on the data you previously entered (cells B14–28 through F14–28), this information will be automatically calculated:

- *Any method*: sum of all the methods listed above
  - Formula=SUM(B14:B28)
- *Any modern method*: sum of pill, injectable, male condom, female condom, SDM, implant, IUD, female sterilization, male sterilization, and "other"
  - Formula=SUM(B14:B19,B21:B28)
- *All long-acting and permanent methods (LA/PMs)*: sum of implant, IUD, female sterilization, and male sterilization
  - Formula=SUM(B21:B26)

F32 fx =MIN(SUM(F21:F26),100)

	A	B	C	D	E	F
12		First Data Point				Last Data Point
13	**CPR**				**1998**	**2003**
14	Pill				2.60	3.20
15	Injectable - two-month					
16	Injectable - three-month				2.50	6.40
17	Male Condom				0.80	1.90
18	Female Condom					
19	Standard Days Method					
20	Any Trad. or Folk				7.00	4.60
21	Implant - Norplant, Jadelle				0.00	0.30
22	Implant - Implanon					
23	Implant - Sino-implant (II)					
24	IUD				0.40	0.20
25	Female Sterilization				1.40	2.00
26	Male Sterilization				0.00	0.00
27	Other 1					
28	Other 2					
29						
30	Any Method	-	-	-	14.70	18.60
31	Any Modern Method	-	-	-	7.70	14.00
32	All LA/PMs	-	-	-	1.80	2.50

This level of analysis provides a useful picture of the overall CPR status and provides a comparison among categories of methods. For example, these projections can help you decide if you want to put more effort into advocating for more resources. If LA/PMs are particularly underutilized, you may want to think about strengthening these services in your program. LA/PMs are often underutilized for a number of reasons, including myths and misconceptions about them, a lack of supplies, or a lack of skilled providers who can offer them. LA/PMs also require a larger up-front investment than do resupply methods such as the pill or the injectable. Yet in the longer term, LA/PMs are among the most cost-effective methods and are appropriate for both those who want to space births and those who want to limit future pregnancies.

We can see from the image above that Cell F32 (*All LA/PMs* for the year 2003) is calculated by adding implants, IUD, female sterilization, and male sterilization in the year 2003 (cells F21 through F26). This is an example of the formulas contained throughout the worksheet.

Calculating the Past CPR Trend

To project based on the past trend, the average annual increase or decrease must be calculated. If you enter only two data points, this is simply the difference between the first CPR and the second CPR, divided by the number of years between them. This approach is more conservative than using a constant percentage change from year to year. If you enter 3–5 data points, a line of best fit will be generated, and the slope will be used as the annual rate of increase.

The formulas in Column G will automatically calculate the average annual change during the past period by calculating the slope of the line of best fit between all CPR points entered. This information is very important for assessing the progress of your family planning program against strong family planning programs. (Strong family planning programs have typically been able to increase CPR by approximately 1.5 percentage points annually; see the tables in Appendix F [page 105] for more information on family planning trends.) The average annual rates of increase in Column G can help you think about how your program compares against a strong program. When testing future goal scenarios (discussed in detail later in this guide), the average annual increase or decrease can also help you think about whether your future program goals are realistic. Since an annual increase of 1.5 indicates a *strong* program, an increase projected to go much higher than 1.5 points annually may not be reasonable to expect. Goals may turn out not to be achievable if they are initially set too high. Assessing what an achievable annual gain for your context may be requires thinking about factors such as past performance, family planning resource allocation, service delivery capacity (current and any planned expansion), and trends of family planning programs in settings similar to yours.

- The following image shows Column G: *Average Annual Increase/Decrease for Past Trend.*
  - This is the slope of the line of best fit between the data points entered.

	A	B	C	D	E	F	G
12		**First Data Point**				**Last Data Point**	**Average Annual Increase/Decrease for Past Trend to Be Used in Formulas for Projections**
13	**CPR**				**1998**	**2003**	
14	Pill				2.60	3.20	0.12
15	Injectable - two-month						0.00
16	Injectable - three-month				2.50	6.40	0.78
17	Male Condom				0.80	1.90	0.22
18	Female Condom						0.00
19	Standard Days Method						0.00
20	Any Trad. or Folk				7.00	4.60	-0.48
21	Implant - Norplant, Jadelle				0.00	0.30	0.06
22	Implant - Implanon						0.00
23	Implant - Sino-implant (II)						0.00
24	IUD				0.40	0.20	-0.04
25	Female Sterilization				1.40	2.00	0.12
26	Male Sterilization				0.00	0.00	0.00
27	Other 1						0.00
28	Other 2						0.00
29							
30	Any Method	-	-	-	14.70	18.60	0.78
31	Any Modern Method	-	-	-	7.70	14.00	1.26
32	All LA/PMs	-	-	-	1.80	2.50	0.14

Interpreting the Data: CPR Trends

We can see from the example on page 17 that over the five-year period between data points, use of some methods has grown, while use of others has declined. It is critical at every step in this process to think about what the data illustrate. When examining the data, it is necessary to consider the various root causes that may have influenced CPR and family planning uptake in the years between surveys.

Issues to Consider

When examining the past trend's annual increase or decrease, you may want to think about issues such as:

- Is the annual increase or decrease equal to, more than, or less than what you may have thought?
- In terms of international experience, relatively strong family planning programs can experience a 1.5% annual increase in CPR; how does your program compare to this number? (See Appendix F [page 105] for international estimates on past annual increases/decreases of family planning programs.)
- What factors contributed to these changes within the health care system and in an external environment?
- Have there been shifts in commitment at various policy levels, either toward or away from family planning in general or specific methods?
- Where have resources been allocated? Have they been allocated to public health? Are they being allocated to other health needs?
- What were the family planning priorities during the years between surveys?
- Have champion policy makers, health service providers, community leaders, or other family planning advocates been lost to other professional positions or geographic areas?
- Are myths and rumors about a particular method contributing to possible decreases in utilization?
- Might any communication campaigns or community activities have contributed to an increase in method utilization?
- Have contraceptive stock-outs reduced usage?
- Have new family planning methods been introduced in your program?
- Have there been any changes in policies governing the level of cadre allowed to provide a specific method during the years between surveys?
- Are there any other factors that may have played a role?

It is important to ask these types of questions to make sense of the projections. In the example provided, one might analyze the data based on factors such as:

- The three-month injectable experienced the highest growth rate, at 0.78 percentage points annually. What might the reasons be for this increase? Could it be due to word-of-mouth reporting (i.e., women hearing about it from their friends)? Could it be because women feel they can use the method without their partner's knowledge? Could it be due to provider bias, because the method can be given relatively quickly? Could it be due to an increase in the number of providers trained to offer the service? Was there a policy change that allowed a lower level of health service provider to offer injectables? Did the method satisfy an unmet need in the community?
- IUD use declined by 0.04 percentage points per year. What might the reasons be for this decrease? What level of health service provider can offer IUD services? Was there a decrease in the number of professionals who could offer it? Could the decline be due to myths or rumors about the IUD? Did earlier communication campaigns about the method stop at some point between the survey years? Were there adequate commodities to meet demand? What impact did donor support or termination of support have on IUD use?
- Implant prevalence (for this example, we are using Norplant/Jadelle) rose from 0.00 to 0.30 between survey years. What might account for this growth? Were implants introduced in the area

This level of analysis is important in thinking about how best to plan for future family planning programs and to advocate for the types of interventions that are needed to strengthen and sustain programs.

Continuation of the Past Trend: Projecting into the Future

The spreadsheet will automatically calculate (on an annual basis) the continuation of the past trend into the future, 25 years after your last data point, based on the assumption that the past trend will continue. It is important to keep in mind, however, that the farther into the future you project, the less reliable your numbers become. Projecting out 25 years provides simply some indication as to where your program could possibly be years from now if a basic past trend continues.

Note: *If you wanted to examine a past trend up to 2015, for example, you can look at the column containing those figures; assessing figures for up to 25 years is not required for use of the tool.*

We can see how the formulas are constructed to project CPR into the future. For example, the image below shows that female sterilization in the year 2004 is calculated by using the 2003 data point in Column F and adding the average annual increase (the slope). The tool performs this calculation for each method for the subsequent 25 years.

One caution is that if the 2003 CPR for a method is already high and the annual increase was also high, a 25-year projection can produce an impossibly high level of use (even to up to 100% of women). Keep in mind that even in countries with very strong family planning programs, total CPR rarely exceeds 70%; the United States, the United Kingdom, and South Africa have total CPRs of 72.8%, 82.0%, and 60.3%, respectively (UN, 2009). Not only may the projection for total CPR rise too high, it may also do so for the subtotals for modern methods and for LA/PMs. Likewise, a significant decline for a particular method may produce a projected CPR of zero within a few years. Therefore, you must inspect each method's projection to decide how likely it is and analyze the outcomes accordingly.

I25 f_x =MAX(0,I13*G25+AJ25)

	A	B	C	D	E	F	G	I
12		First Data Point				Last Data Point	Average Annual Increase/Decrease for Past Trend to Be Used in Formulas for	
13	**CPR**				**1998**	**2003**		**2004**
14	Pill				2.60	3.20	0.12	3.32
15	Injectable - two-month						0.00	0.00
16	Injectable - three-month				2.50	6.40	0.78	7.18
17	Male Condom				0.80	1.90	0.22	2.12
18	Female Condom						0.00	0.00
19	Standard Days Method						0.00	0.00
20	Any Trad. or Folk				7.00	4.60	-0.48	4.12
21	Implant - Norplant, Jadelle				0.00	0.30	0.06	0.36
22	Implant - Implanon						0.00	0.00
23	Implant - Sino-implant (II)						0.00	0.00
24	IUD				0.40	0.20	-0.04	0.16
25	Female Sterilization				1.40	2.00	0.12	2.12
26	Male Sterilization				0.00	0.00	0.00	0.00
27	Other 1						0.00	0.00
28	Other 2						0.00	0.00
29								
30	Any Method	-	-	-	14.70	18.60	0.78	19.38
31	Any Modern Method	-	-	-	7.70	14.00	1.26	15.26
32	All LA/PMs	-	-	-	1.80	2.50	0.14	2.64

It is important to note that the formulas have been constructed to ensure that the CPR of any given method will not go below zero, even if a sharply negative trend is occurring; they will also not exceed 100%, even if a sharp increase is projected. Clearly, that would indicate that early trends cannot continue at the same annual rate. An important caution is to examine the trend for the total CPR, since the individual method assumptions may drive it too high, far above the average level for strong family planning programs (1.5% per year).

We can see in the figures below how, given the defined assumptions, the past CPR trend behaves for every method, based on the average annual increase previously calculated.

	A	B	C	D	E	F	G	I	J	K
12		First Data Point				Last Data Point	Average Annual Increase/Decrease for Past Trend to Be Used in Formulas for			
13	**CPR**				**1998**	**2003**		**2004**	**2005**	**2006**
14	Pill				2.60	3.20	0.12	3.32	3.44	3.56
15	Injectable - two-month						0.00	0.00	0.00	0.00
16	Injectable - three-month				2.50	6.40	0.78	7.18	7.96	8.74
17	Male Condom				0.80	1.90	0.22	2.12	2.34	2.56
18	Female Condom						0.00	0.00	0.00	0.00
19	Standard Days Method						0.00	0.00	0.00	0.00
20	Any Trad. or Folk				7.00	4.60	-0.48	4.12	3.64	3.16
21	Implant - Norplant, Jadelle				0.00	0.30	0.06	0.36	0.42	0.48
22	Implant - Implanon						0.00	0.00	0.00	0.00
23	Implant - Sino-implant (II)						0.00	0.00	0.00	0.00
24	IUD				0.40	0.20	-0.04	0.16	0.12	0.08
25	Female Sterilization				1.40	2.00	0.12	2.12	2.24	2.36
26	Male Sterilization				0.00	0.00	0.00	0.00	0.00	0.00
27	Other 1						0.00	0.00	0.00	0.00
28	Other 2						0.00	0.00	0.00	0.00
29										
30	Any Method	-	-	-	14.70	18.60	0.78	19.38	20.16	20.94
31	Any Modern Method	-	-	-	7.70	14.00	1.26	15.26	16.52	17.78
32	All LA/PMs	-	-	-	1.80	2.50	0.14	2.64	2.78	2.92

Here we see the projections through 2029, which is the 25-year projection in this example.

	A	B	C	D	E	F	G	H	AH
13	**CPR**				**1998**	**2003**			**2029**
14	Pill				2.60	3.20	0.12		6.32
15	Injectable - two-month						0.00		0.00
16	Injectable - three-month				2.50	6.40	0.78		26.68
17	Male Condom				0.80	1.90	0.22		7.62
18	Female Condom						0.00		0.00
19	Standard Days Method						0.00		0.00
20	Any Trad. or Folk				7.00	4.60	-0.48		0.00
21	Implant - Norplant, Jadelle				0.00	0.30	0.06		1.86
22	Implant - Implanon						0.00		0.00
23	Implant - Sino-implant (II)						0.00		0.00
24	IUD				0.40	0.20	-0.04		0.00
25	Female Sterilization				1.40	2.00	0.12		5.12
26	Male Sterilization				0.00	0.00	0.00		0.00
27	Other 1						0.00		0.00
28	Other 2						0.00		0.00
29									
30	Any Method	-	-	-	14.70	18.60	0.78		47.60
31	Any Modern Method	-	-	-	7.70	14.00	1.26		47.60
32	All LA/PMs	-	-	-	1.80	2.50	0.14		6.98

Interpreting the Data: Projected Past Trend Continuation

It is critical to assess projections and ask yourself questions about what they suggest. One may look at the results and see, for example, that due to the annual decrease in prevalence of any traditional method, use is projected to be zero in 2013. It is important to think about how likely this is, or whether there may in fact still be some traditional method use by then. IUD use was also projected to be zero by 2008; again, it is important to think about how reasonable these numbers are and what they mean.

If you are only concerned with knowing the projected modern method CPR in 2015, or any other specific year in the future, all that you need to do is find the column for that year and analyze the results accordingly. Though the file is set to project to 25 years, it is not necessary to use it beyond the final year of interest.

The following image, for example, shows prevalence up to the year 2015. We can see that the prevalence of any method use is 29.40%; modern method prevalence is also 29.40%, due to the annual decrease in traditional methods. Again, it is important to analyze the data and think about what the numbers suggest.

Assessing the past trend will help you think about the types of scenarios you would like to test when projecting and will help put into perspective the goals that have been set.

	A	B	C	D	E	F	G	H	S	T
12		First Data Point				Last Data Point	Average Annual Increase/Decrease for Past Trend to Be Used in Formulas for Projections			Projec
13	CPR				1998	2003			2014	2015
14	Pill				2.60	3.20	0.12		4.52	4.64
15	Injectable - two-month						0.00		0.00	0.00
16	Injectable - three-month				2.50	6.40	0.78		14.98	15.76
17	Male Condom				0.80	1.90	0.22		4.32	4.54
18	Female Condom						0.00		0.00	0.00
19	Standard Days Method						0.00		0.00	0.00
20	Any Trad. or Folk				7.00	4.60	-0.48		0.00	0.00
21	Implant - Norplant, Jadelle				0.00	0.30	0.06		0.96	1.02
22	Implant - Implanon						0.00		0.00	0.00
23	Implant - Sino-implant (II)						0.00		0.00	0.00
24	IUD				0.40	0.20	-0.04		0.00	0.00
25	Female Sterilization				1.40	2.00	0.12		3.32	3.44
26	Male Sterilization				0.00	0.00	0.00		0.00	0.00
27	Other 1						0.00		0.00	0.00
28	Other 2						0.00		0.00	0.00
29										
30	Any Method	-	-	-	14.70	18.60	0.78		28.10	29.40
31	Any Modern Method	-	-	-	7.70	14.00	1.26		28.10	29.40
32	All LA/PMs	-	-	-	1.80	2.50	0.14		4.28	4.46

Issues to Consider

As you move forward, be sure to keep in mind your current family planning program context and capacity. Running projection models can help illustrate future needs, but it is up to the programmer to think about how the results relate to the current local context in terms of issues such as:

- Current resource allocation: Will current resources keep up with projected increases in services?
- Stock-outs: Are stock-outs or lack of supplies a barrier to service provision?
- Provider capacity: What level of cadre is able to provide services?
- Community awareness of methods: Do communities know the benefits of all methods?
- Client access to methods: Can clients obtain a variety of methods without having to travel long distances?

Population Data

Now that you have projected CPR based on your past trend, it is time to explore the relationship between population data and CPR.

Thinking about programmatic elements such as those previously noted will help you to put the data into a broader context and to think about how and where you may need to advocate for more funding and human resources or about where you may need to target interventions to strengthen the family planning program.

The projected population of WRA or MWRA is a critical component in calculating numbers of users, adopters, or commodities, as well as service delivery capacity. Most countries' populations are increasing, and this will affect those numbers. Data on the numbers of users, adopters, removals, and commodities are necessary for illustrating what CPR means in terms of numbers, not just percentages. It also helps to illustrate the impact of a growing population on CPR.

The following example illustrates how population growth can have an impact on users: Country X had a 31.5% any-method CPR among MWRA in 1998 and a 31.5% any-method CPR among MWRA in 2003. The CPR data seem to indicate that Country's X CPR stagnated over the five-year period between surveys. However, Country X experienced population growth over that same time period. In 1998, the population of MWRA was approximately 4.3 million, while in 2003, the number of MWRA had risen to approximately 5.1 million. The chart below shows that while the any-method CPR stayed the same between surveys, the population increased, and therefore the number of family planning users actually increased.

Year	Any-method CPR among MWRA	Estimated MWRA population	Estimated no. of users	Difference in users between 1998 and 2003
1998	31.5%	4.3 million	1.4 million	200,000
2003	31.5%	5.1 million	1.6 million	

This example shows that the number of family planning users in Country X grew over time; focusing solely on CPR leaves the impression that no gains had been made and that the family planning program had stagnated.

Population Data That You Have to Input

Now that you have completed inputting past CPR trend data and projecting future CPR, it is time to input the population data needed to calculate the numbers of users and adopters for any given year and method. You must be sure to input the number of WRA or MWRA, depending on which you

decided to use as your basis for planning. As noted above, most projections use MWRA, but if you use WRA, you must also use CPR based on WRA.

We can see from the following image that Row 36 of the *Past Trend Continuation* worksheet contains the number of MWRA in this example. You will then need to input the projected population figures into these green cells going out 25 years, or until the year in which you are interested. It is very important that you always double-check your population figures to make sure that they were input correctly. Again, as this input is connected to formulas throughout the worksheet, any inaccurate data entry here will result in faulty projections.

	First Data Point				Last Data Point	Average Annual Increase/Decrease for Past Trend to Be Used in Formulas for Projections			
CPR				**1998**	**2003**		**2004**	**2005**	**2006**
Pill				2.60	3.20	0.12	3.32	3.44	3.56
Injectable - two-month						0.00	0.00	0.00	0.00
Injectable - three-month				2.50	6.40	0.78	7.18	7.96	8.74
Male Condom				0.80	1.90	0.22	2.12	2.34	2.56
Female Condom						0.00	0.00	0.00	0.00
Standard Days Method						0.00	0.00	0.00	0.00
Any Trad. or Folk				7.00	4.60	-0.48	4.12	3.64	3.16
Implant - Norplant, Jadelle				0.00	0.30	0.06	0.36	0.42	0.48
Implant - Implanon						0.00	0.00	0.00	0.00
Implant - Sino-implant (II)						0.00	0.00	0.00	0.00
IUD				0.40	0.20	-0.04	0.16	0.12	0.08
Female Sterilization				1.40	2.00	0.12	2.12	2.24	2.36
Male Sterilization				0.00	0.00	0.00	0.00	0.00	0.00
Other 1						0.00	0.00	0.00	0.00
Other 2						0.00	0.00	0.00	0.00
Any Method	-	-	-	14.70	18.60	0.78	19.38	20.16	20.94
Any Modern Method	-	-	-	7.70	14.00	1.26	15.26	16.52	17.78
All LAPMs	-	-	-	1.80	2.50	0.14	2.64	2.78	2.92
Population Data: Number of	**0**	**0**	**0**	**1998**	**2003**		**2004**	**2005**	**2006**
MWRA				858,289	1,026,782	Copy From Calculator	1,065,414	1,106,120	1,148,954

The Reality √ CD-ROM includes an Excel file titled "Calculators" that contains two calculators to help you calculate the population of WRA or MWRA. These are:

1. **The Growth Rate Calculator**
   If you have age- and sex-specific population data for one year in your geographic area of interest (i.e., a recent census that provides data for your region or district), as well as an estimated growth rate, this calculator can calculate an estimate of the population of WRA for your years of interest.

2. **The National Population Calculator**
   Occasionally, you might want to look at scenarios at the national level. This calculator uses 2008 United Nations population data to calculate the population of women in any age range for any country.[4] Country-specific data from the most recent DHS or from *Profiles for Family Planning and Reproductive Health Programs* (Ross et al., 2005) provide data on the percentage of women of reproductive age who are currently married or in union. No data inputs are required for national-level

[4] Population data used in Reality √ were provided with the permission of the United Nations Population Division. *Source:* United Nations, Department of Economic and Social Affairs, Population Division, 2009.

population estimates. However, the tool provides you with the option to calculate an estimate of the population in your geographic area of interest, by entering an estimated percentage of the national population that resides in your area of interest.

Prior to using either of these tools, ensure that you have enabled macros in Excel on your computer by following the steps listed on pages 6–7 of this guide.

Calculate the Population of WRA Based on Growth Rate

Population Data That You Have to Input

- First, you will need to input the range of years for which you need population data (the range of years for which you will want to look at contraceptive trends in Reality √, including the years for which you are using CPR data).
- You also need to enter age- and sex-specific population data for your region of interest for one year within your target age-range. In general, we will want the number of married women between the ages of 15 and 49. While this information can often be found in the latest national census report, it is often not broken down into age-groups by sex, particularly if it is only a preliminary or summary census report. If this is the case, it may be simplest to calculate the percentage of the national population residing in your area of interest (by dividing the population of the area by the total national population) and use the National Population Calculator, described below.
- Finally, you will need to input an estimated population growth rate; this information is often found in census reports.

Follow the steps outlined within the calculator itself. Enter data only in the blue cells.

1. Enter the first and last years for which you want to calculate population data.
    - In the *Past Trends Continuation* sheet, the first year will be the year of your most recent data source, in Cell F13 (for example, if using a 2005 source as your most recent data point, your population figures will need to start from 2005). The last year for which you want to calculate data will vary based on your needs; if you are interested in continuing past trends through 2015, for example, the last year would be 2015.
    - In the *Future Goals* sheet, the first year will be the year of your most recent data source (Cell D14) and the last year will be the year for which you want to test a CPR goal (Cell C14).
2. Enter the year for which you have population data (the year in which the data were collected).
3. Enter the population of WRA or MWRA in your geographic area of interest.
4. Enter the estimated rate of population growth.
5. Click on the "Calculate" button; the estimated population of WRA of MWRA for each year will be generated below.

Calculate using growth rate projection			
Define the year range for which you will need population data	2005	to	2020
Define the year for which you have population data	2017		
Enter the population data that you have	44,444		
Enter the annual percentage population growth rate	1.5%		
Indicate whether you want to look at all women of reproductive age (WRA) or just married women of reproductive age (MWRA).			
☐ WRA **or** ☑ MWRA			
If you have selected MWRA, please enter the percentage of WRA who are married:	50%		
	Calculate		

See the below example, in which we calculate the estimated population of WRA between the years of 2005 and 2010, based on a population of 100,000 in 2005 and an estimated growth rate of 1.5%.

	Calculate using growth rate projection								
Step 1	Define the year range for which you will need population data	2005	to	2010					
Step 2	Define the year for which you have population data	2005							
Step 3	Enter the population data that you have	100,000							
Step 4	Enter the annual percentage population growth rate	1.5%							
Step 5	*Indicate whether you want to look at all women of reproductive age (WRA) or just married women of reproductive age (MWRA).*								
	☐ WRA **or** ☑ MWRA								
	If you have selected MWRA, please enter the percentage of WRA who are married:	50%							
Step 6		Calculate							
	Population Growth Rate Result	Projection for 2005 - 2010 using a population of 100,000 from year 2005 with a growth rate of 1.5% and MWRA rate of 50%							
		2005	**2006**	**2007**	**2008**	**2009**	**2010**		
		50,000	50,750	51,511	52,284	53,068	53,864		

After verifying that the data look correct, move back to the Reality √ workbook. Immediately before the green population cells for the years beyond your most recent data point, select the "Copy from Calculator" button, and your population values generated in the Calculator should automatically populate the corresponding cells.

Alternatively, you could copy and paste the figures from the Calculator workbook into the green population data cells in Reality √.

Note that, in the *Past Trends Continuation* sheet, if you would like to view data for the years prior to the year of your most recent data source (past years), the "Copy from Calculator" button will not bring these figures over from the calculator. Rather, you will need to copy and paste the values generated in the calculator into the population cells in Reality √. In the example on page 23, for example, the population values for 1998 (Cell E36) will not be imported automatically, while the values for 2003 and beyond will.

Also, if the years for which you generate population data in the calculator do not correspond with the range of years you have entered in Reality √, you will receive an error message. If you change the years entered as your data sources, any population values will be erased and the process will need to be repeated.

This tool can be used to calculate WRA population estimates at any geographic level (national, regional, district, clinic catchment area, etc.), provided that you have an estimate of population data for one year as well as an estimated population growth rate.

Calculate the Population of WRA Based on United Nations Population Data

This tool uses United Nations population data from 2008 to calculate the national population of women (married or all) in your age range of interest in the country you select.[5, 6]

National Population Data That You Have to Input

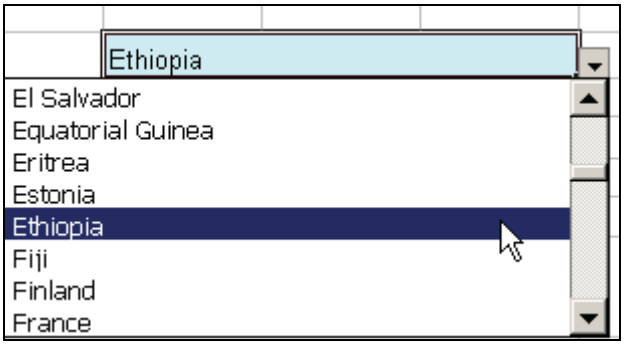
- No data input is required if you wish only to calculate the population of WRA (married or all) at the national level.
- If you wish to estimate the number of WRA in a particular region or district, you will need an estimate of the percentage of the national population that resides in your area of interest.

Follow the steps outlined within the Calculator itself. Select options from the drop-down menus in the blue cells.

[5] Population data used in Reality √ were provided with the permission of the United Nations Population Division. *Source:* United Nations, 2009.

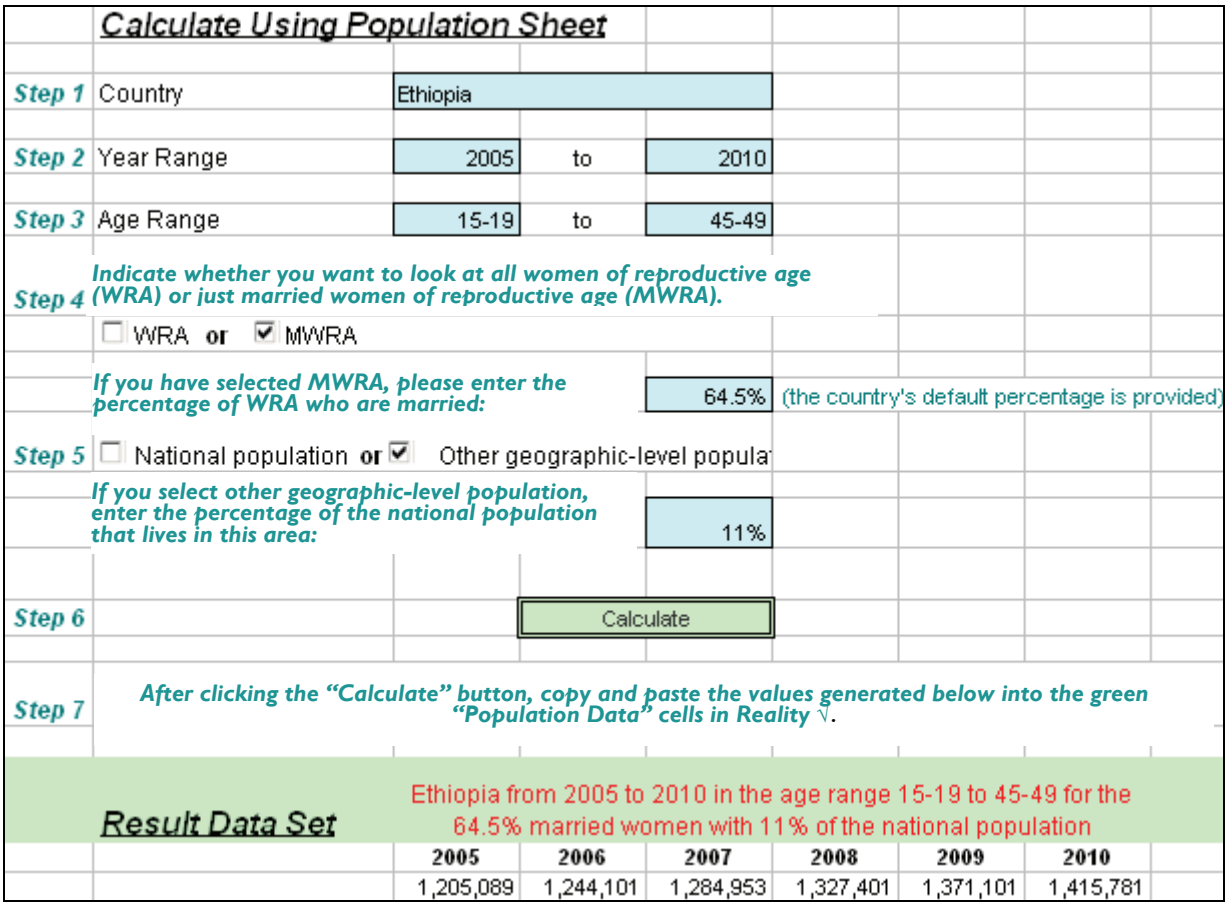
[6] Data on the percentage of women of reproductive age who are married or in union are obtained from the most recent DHS for each country. If this information was not available through the DHS, data were obtained from Ross et al., 2005.

1. Select your country from the drop-down menu, as shown below.



2. As with the calculator based on growth rates, enter the first and last years for which you want to calculate population data.
   - In the *Past Trends Continuation* sheet, the first year will be the year of your most recent data source, in Cell F13 (for example, if using a 2008 source as your most recent data point, your population figures will need to start from 2008). The last year for which you want to calculate data will vary based on your needs; if you are interested in continuing past trends through 2015, for example, the last year would be 2015.
   - In the *Future Goals* sheet, the first year will be the year of your most recent data source (Cell D14) and the last year will be the year for which you want to test a CPR goal (Cell C14).
3. Select the range of ages of women for which you will need population data. (In general, we will look at women between the ages of 15 and 49 as women of reproductive age.)
4. Indicate whether you would like to look at all WRA or only at those who are married.
   - If you select MWRA, you can use the default percentage of WRA that are married that will automatically appear in the box (from the most recent DHS), or you can enter your own percentage.
5. Indicate whether you wish to view data for the national level or for another geographic level.
   - If you select the "other geographic level" option, you will need to enter the percentage of the national population that resides in your area of interest. This can be calculated by dividing the population of the area of interest by the total national population; these figures can usually be obtained from the most recent census report.
6. Click on the "Calculate" button.
7. Follow the steps outlined above to copy the values into the green population cells in Reality √ by using the "Copy from Calculator" button. Be sure that the years for which you calculated population data align with the years in Reality √, or you will receive an error message.

See the example on page 28, in which we calculate the population of MWRA between ages 15 and 49 in a specific region that comprises 11% of the population of Ethiopia for 2005 to 2010. We use the default value of 64.5% of women being married, but we could enter another value in the box if we wished to.



Upon verifying that the numbers look correct, we would then use the "Copy from Calculator" button to paste the values into the green population data cells in Reality √.

For more specific information on how to obtain or calculate population data estimates needed for Reality √, see Appendix A: Population Data (page 73).

Population data are linked to all other levels of analysis, so we will now move on to the *Number of Users* to explore how population growth impacts family planning programming.

Number of Users

After inputting the number of WRA or MWRA, it is time to quantify CPR in terms of users. Again, while CPR itself is important, calculating the number of users by method helps to quantify and illustrate what CPR *means* for the demands upon a program.

While we saw a simple example above of the relationship between CPR and population, the actual formula for calculating the number of users is:

- MWRA*CPR/100, or
- WRA*CPR/100, where the CPRs pertain to the percentage of all women using a method

The following example shows the projected number of female sterilization users in 2015. We can see the calculation in the formula bar, and the blue line denotes the two fields linked to the calculation for the CPR and for MWRA:

- Number of MWRA * female sterilization CPR/100

T53 fx =T$36*T25/100

	A	E	F	G	R	S	T
13	**CPR**	**1998**	**2003**		**2013**	**2014**	**2015**
14	Pill	2.60	3.20	0.12	4.40	4.52	4.64
15	Injectable - two-month			0.00	0.00	0.00	0.00
16	Injectable - three-month	2.50	6.40	0.78	14.20	14.98	15.76
17	Male Condom	0.80	1.90	0.22	4.10	4.32	4.54
18	Female Condom			0.00	0.00	0.00	0.00
19	Standard Days Method			0.00	0.00	0.00	0.00
20	Any Trad. or Folk	7.00	4.60	-0.48	0.00	0.00	0.00
21	Implant - Norplant, Jadelle	0.00	0.30	0.06	0.90	0.96	1.02
22	Implant - Implanon			0.00	0.00	0.00	0.00
23	Implant - Sino-implant (II)			0.00	0.00	0.00	0.00
24	IUD	0.40	0.20	-0.04	0.00	0.00	0.00
25	Female Sterilization	1.40	2.00	0.12	3.20	3.32	3.44
26	Male Sterilization	0.00	0.00	0.00	0.00	0.00	0.00
27	Other 1			0.00	0.00	0.00	0.00
28	Other 2			0.00	0.00	0.00	0.00
29							
30	Any Method	14.70	18.60	0.78	26.80	28.10	29.40
31	Any Modern Method	7.70	14.00	1.26	26.80	28.10	29.40
32	All LA/PMs	1.80	2.50	0.14	4.10	4.28	4.46
33							
35	**Population Data: Number of**	**1998**	**2003**		**2013**	**2014**	**2015**
36	**MWRA**	858,289	1,026,782	Copy From Calculator	1,470,489	1,516,617	1,562,745
37	Resize Columns to Fit						
38							
39	**NUMBER OF USERS**						
40			**Last Data Point**				
41		**1998**	**2003**		**2013**	**2014**	**2015**
53	Female Sterilization	12,016	20,536		47,056	50,352	53,758

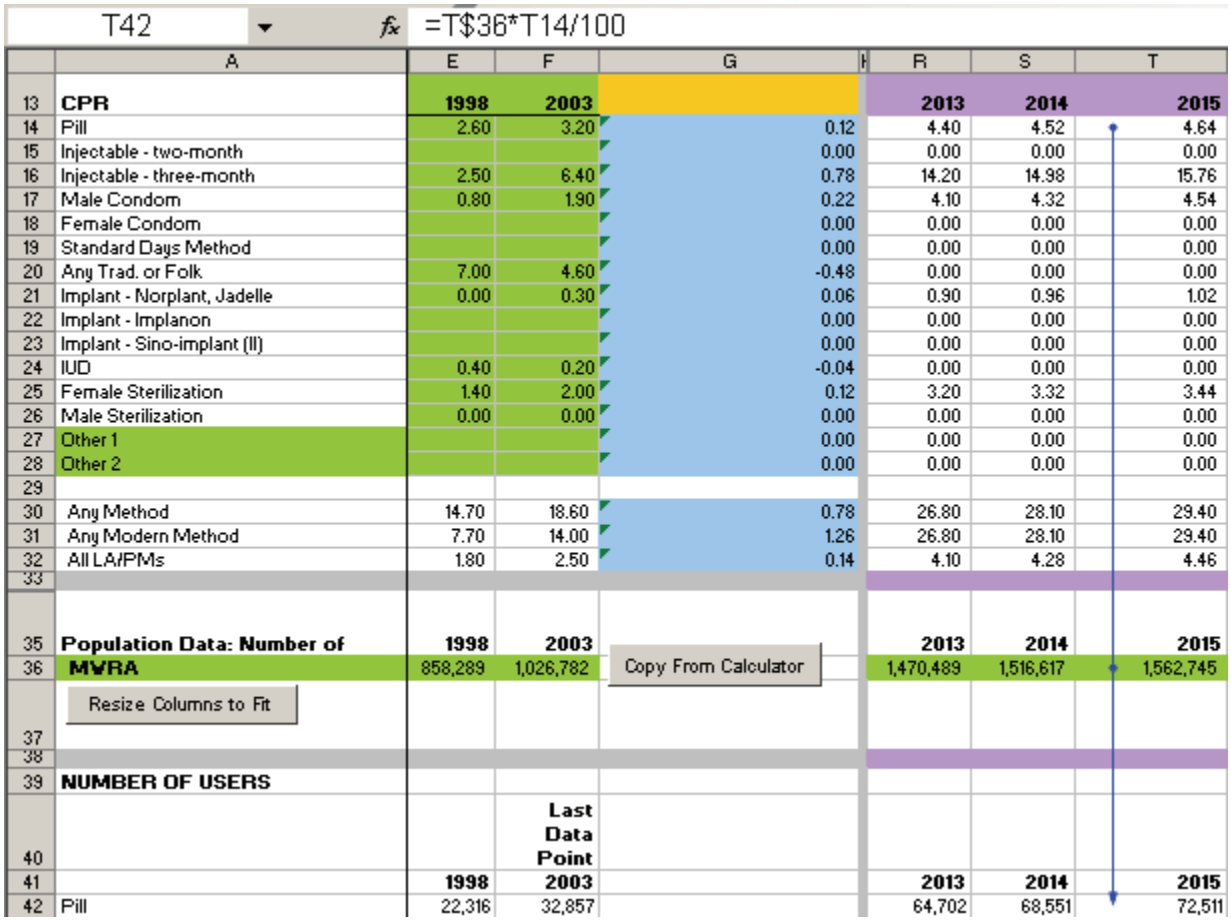
Interpreting the Data: Number of Users

We know from the earlier trend analysis that female sterilization utilization was increasing by 0.12 percentage points annually. You may have thought "0.12 points is not much at all" or "increasing female sterilization usage by 0.12 points annually should not be that difficult"; this is where looking at the numbers of users and adopters becomes extremely useful.

In this example, female sterilization prevalence in 2014 is 3.32%, which equals an estimated 50,352 female sterilization users.

In 2015, the prevalence is projected to be 3.44%. However, because the number of MWRA rose, there would be an estimated 53,758 users in 2015. Thus, because of the increase in MWRA, an increase in prevalence of a mere 0.12 percentage points means an increase of 3,406 *users* in one year. Keep in mind that this increase in *users* may require more *adopters* than 3,406; this net increase in users must account for the number of sterilized women who age out of the reproductive age-group.

We can look at an example of resupply methods to solidify the importance of examining *users*. We see from the following image that pill users are calculated in the same way. All of the cells pertaining to the projected number of *users* are formulated in the same way throughout the worksheet; they all link to the number of MWRA*CPR/100.



T42 fx =T$36*T14/100

	A	E	F	G	R	S	T
13	**CPR**	**1998**	**2003**		**2013**	**2014**	**2015**
14	Pill	2.60	3.20	0.12	4.40	4.52	4.64
15	Injectable - two-month			0.00	0.00	0.00	0.00
16	Injectable - three-month	2.50	6.40	0.78	14.20	14.98	15.76
17	Male Condom	0.80	1.90	0.22	4.10	4.32	4.54
18	Female Condom			0.00	0.00	0.00	0.00
19	Standard Days Method			0.00	0.00	0.00	0.00
20	Any Trad. or Folk	7.00	4.60	-0.48	0.00	0.00	0.00
21	Implant - Norplant, Jadelle	0.00	0.30	0.06	0.90	0.96	1.02
22	Implant - Implanon			0.00	0.00	0.00	0.00
23	Implant - Sino-implant (II)			0.00	0.00	0.00	0.00
24	IUD	0.40	0.20	-0.04	0.00	0.00	0.00
25	Female Sterilization	1.40	2.00	0.12	3.20	3.32	3.44
26	Male Sterilization	0.00	0.00	0.00	0.00	0.00	0.00
27	Other 1			0.00	0.00	0.00	0.00
28	Other 2			0.00	0.00	0.00	0.00
29							
30	Any Method	14.70	18.60	0.78	26.80	28.10	29.40
31	Any Modern Method	7.70	14.00	1.26	26.80	28.10	29.40
32	All LA/PMs	1.80	2.50	0.14	4.10	4.28	4.46
33							
35	**Population Data: Number of**	**1998**	**2003**		**2013**	**2014**	**2015**
36	**MWRA**	858,289	1,026,782	Copy From Calculator	1,470,489	1,516,617	1,562,745
37	Resize Columns to Fit						
38							
39	**NUMBER OF USERS**						
40			**Last Data Point**				
41		**1998**	**2003**		**2013**	**2014**	**2015**
42	Pill	22,316	32,857		64,702	68,551	72,511

This shows that pill prevalence of 4.64% in 2015 means that there will be 72,511 *users* in 2015. We saw from the trend analysis that pill prevalence was calculated to rise by 0.12 percentage points annually, so the 0.12 percentage point increase in prevalence translates into an increase of 3,960 pill users between 2014 and 2015.

Again, explore the projections and think about what the numbers indicate. It is important to think about the projection in the context of family planning programming and the likely implications for access, resources, services, etc. Before continuing with further discussion and analysis on what *user* numbers can illustrate, it is important to look at numbers of *adopters*. Calculating the number of *adopters* (new users) will shed more light on how to understand the *number of users*. The strong relationship between the various levels of analysis becomes increasingly apparent as we move through these steps.

Number of Adopters (New Users)

We have seen how the number of projected users is calculated, but to actually attain a given number of *users* in any one year, we have to account for various factors.

New adopters are needed each year for three reasons: to replace those who discontinued since the previous year (as well as sterilization users who pass age 49); to allow for the rise in the CPR; and to allow for population increase in WRA or MWRA. These three sources of adopters (new users) produce the projected increase in users for the next year. The Excel worksheet shows the growth in users needed from one year to the next due to the CPR rise and population growth, and the number of adopters needed is this increase plus an allowance for dropouts from the previous year. The formulas in each cell for adopters correspond to that.

Thus the formula for calculating the number of *adopters* in a given year is:

(Number of users in the current year – number of users in the previous year)
+
(Number of users in the previous year * discontinuation rate)

Note that if a current user switches to a new method, she is considered an adopter (new user) for that method. For example, if a woman has used injectables for a decade but has an IUD inserted this year, she is an adopter (new user) of the IUD (and a discontinuer of injectables).

The following examples will help show the application of these formulas and the relationship between users and adopters. First, we will explore discontinuation.

Discontinuation

Discontinuation rates impact the programmatic decisions you make. Discontinuation will always be a factor with contraceptive methods, for a range of reasons: People may not be satisfied with their method; the partner may not like the method; people may lack access to a method; a couple may want to have another child; a couple may switch to another method; or the user may no longer need contraceptive protection. However, health service providers can reduce discontinuation by taking such measures as offering thorough counseling, so that clients know what to expect from their method. It is important for programmers to assess why clients discontinue their method, so the reasons can be addressed accordingly.

Discontinuation rates are calculated here by estimating the percentage of all users who cease use in a 12-month period. If you have local data on method-specific discontinuation rates, you can use those.

Discontinuation data may also be available through the DHS and are also included in Appendix E of this guide (page 103). If you do not have local data on discontinuation rates, you can use average international rates, which are already included in the green cells in Reality √:

- Pill 0.50
- Injectable[7] 0.50
- SDM 0.40

[7] Previous international estimates indicated that the discontinuation rate for injectables was approximately 0.40. However, our examination of DHS data from 35 surveys in 19 countries suggests that the average discontinuation rate is higher, at approximately 0.50.

- Condom (male and female) 0.50
- IUD 0.28
- Implant (Norplant or Jadelle) 0.28
- Implant (Implanon) 0.48
- Implant (Sino-Implant (II)) 0.28
- Sterilization 0.10

These rates are based on the following factors:

- Discontinuation rates for resupply methods (pill, injectable, and condoms) consist of the percentage of users who stop relying on a method over a one-year period.
- The discontinuation rate for SDM (also known as Cycle Beads) also refers to the percentage of users who stop using the method in a one-year period. It is important to point out that this is a new method currently being introduced in many settings. The discontinuation rate given here is based on initial work done with the method and may be a conservative estimate. For more information on this method, please see the Institute for Reproductive Health, Georgetown University (www.irh.org/RTP-SDM.htm).
- For the IUD and implant, the mean percentage discontinuing is estimated by calculating the reciprocal of the mean duration of use (the duration of use is also linked to the CYP factor). Thus, current estimates indicate that IUD users employ the method for approximately 3.5 years; dividing 1 by 3.5 produces the percentage of users who drop out per year. This approach suggests that approximately 28% of IUD users drop out from using the method in any given year (Ross et al., 2005).
- Implant discontinuation is calculated in the same way as for the IUD. Estimates for five-year implants indicate that women use them for approximately 3.5 years (again, the duration of use is linked to the CYP factor). Dividing 1 by 3.5 produces the percentage of users who drop out. Again, approximately 28% of implant users drop out in any given year (Ross et al., 2005). If your program is switching to an implant such as Implanon, which can be used for up to three years, then you could estimate that in actual practice, duration of use may be approximately 2.1 years. You would therefore divide 1 by 2.1 to obtain the percentage of users who drop out annually (48%). (Because information on Implanon use is limited, the Implanon estimates used here are calculated based on average Norplant use.[8])

While one does not *discontinue* using sterilization, its discontinuation rates actually refer to the percentage who age out of the reproductive cycle after age 49. International estimates indicate that a user relies on sterilization for approximately 10 years before aging out.

We can see from the numbers above that resupply methods have higher discontinuation (or dropout) rates than do LA/PMs. Discontinuation rates can significantly impact the number of adopters needed each year to match a projected number of users. These estimates are also based on CYP factors (see Ross et. al., 2005, B.1). See Appendix D for more information on CYP.

For more information on discontinuation, see Stover et al., 2000, and Ross et al., 2005.

[8] A systematic review of subdermal implants noted no difference in continuation rates between Implanon and Norplant. In four studies covering a total of 625 women, 87% of Implanon users were continuing to use the method at three years. This translates into an average duration of use of 2.6 years. (See: Power et al., 2007.)

Relationship between Users, Adopters, and Discontinuers

The relationship between users, adopters, and discontinuers is simple but can be confusing. Consider the following analogy:

- If we fill a bucket with water, we can consider all of the water in the bucket to be our **users**; these are all of the individuals who use a method.
- The percentage of the bucket that is filled with water represents our **CPR;** to achieve a higher CPR, we need to add water to the bucket (increase our number of users)**.**
- However, our bucket has a small hole through which water leaks out; all of the water that spills out represents our **discontinuers**. These are individuals who stop using a particular method for any reason.
- To increase our CPR (or just to maintain it, because of discontinuation), we need to add more water to the bucket. The water that is added represents our **adopters**—the individuals who begin to use a method within a given year.

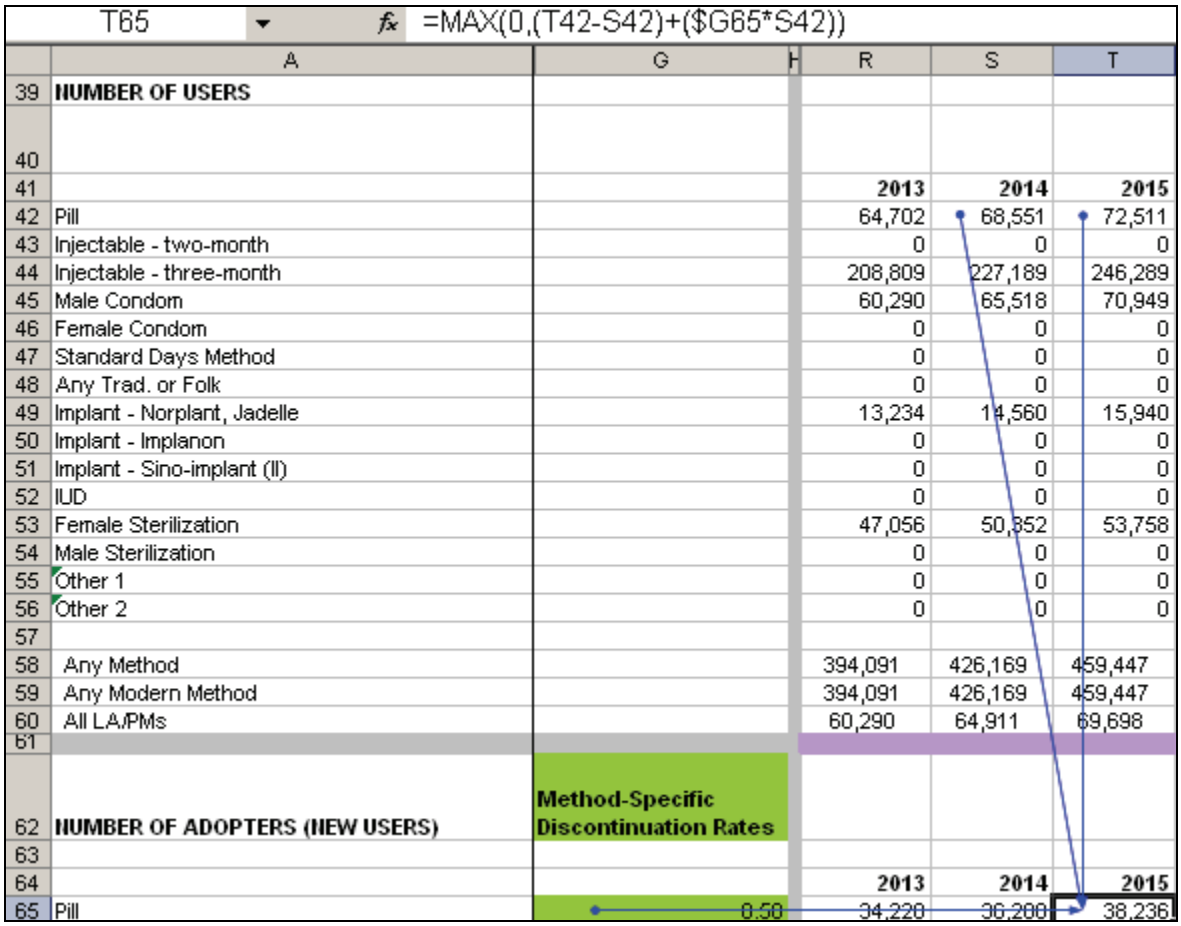
Note that if we were to reduce the amount of water that left the bucket through the leak (i.e., reducing the discontinuation rate), we would need to add less water to compensate for the leak (i.e., we would need to add fewer new adopters).

Discontinuation Data That You Have to Input

Reality √ provides default discontinuation rate data in the green cells in Rows 65 through 79, although you may use different rates if you so choose. Column G to the right shows the cells in which you could include the discontinuation rate for each corresponding method.

	A	G
62	**NUMBER OF ADOPTERS (NEW USERS)**	**Method-Specific Discontinuation Rates**
63		
64		
65	Pill	0.50
66	Injectable - two-month	0.50
67	Injectable - three-month	0.50
68	Male Condom	0.50
69	Female Condom	0.50
70	Standard Days Method	0.40
71	Any Trad. or Folk	0.65
72	Implant - Norplant, Jadelle	0.28
73	Implant - Implanon	0.48
74	Implant - Sino-implant (II)	0.28
75	IUD	0.28
76	Female Sterilization	0.10
77	Male Sterilization	0.10
78	Other 1	
79	Other 2	

To illustrate the link between adopters and users, we can look at an example for a resupply method. We will continue with the example of the pill in the year 2015.



T65 =MAX(0,(T42-S42)+($G65*S42))

	A	G	R	S	T
39	**NUMBER OF USERS**				
40					
41			**2013**	**2014**	**2015**
42	Pill		64,702	68,551	72,511
43	Injectable - two-month		0	0	0
44	Injectable - three-month		208,809	227,189	246,289
45	Male Condom		60,290	65,518	70,949
46	Female Condom		0	0	0
47	Standard Days Method		0	0	0
48	Any Trad. or Folk		0	0	0
49	Implant - Norplant, Jadelle		13,234	14,560	15,940
50	Implant - Implanon		0	0	0
51	Implant - Sino-implant (II)		0	0	0
52	IUD		0	0	0
53	Female Sterilization		47,056	50,352	53,758
54	Male Sterilization		0	0	0
55	Other 1		0	0	0
56	Other 2		0	0	0
57					
58	Any Method		394,091	426,169	459,447
59	Any Modern Method		394,091	426,169	459,447
60	All LAPMs		60,290	64,911	69,698
61					
62	**NUMBER OF ADOPTERS (NEW USERS)**	**Method-Specific Discontinuation Rates**			
63					
64			**2013**	**2014**	**2015**
65	Pill	0.50	34,220	36,206	38,236

We see that in Cell T42, there are 72,511 pill *users* in 2015.

These 72,511 pill *users* in 2015 represent a total of:

1. The number of women who continued using the method between 2014 and 2015
2. The number of women who contributed to the increase in pill prevalence by 0.12 percentage points between 2014 and 2015
3. The increase in the number of MWRA in the population base

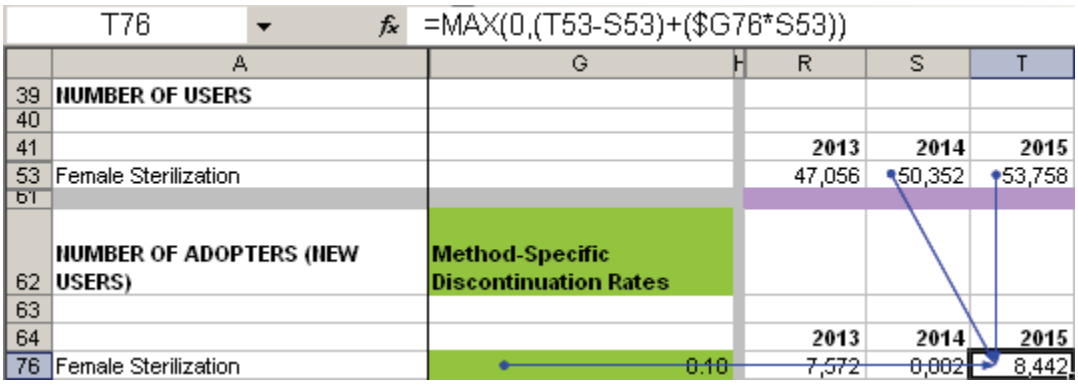
However, even more adopters are needed to replace users from the previous year who discontinued use. Therefore, we can see (in Cell T65) that 38,326 MWRA must *adopt* the method in 2015 to produce the 2015 total of 72,511 pill *users*. This is calculated using the following formula:

(Number of pill users in 2015 – number of pill users in 2014)
+
(Number of pill users in 2014 * pill discontinuation rate)

In terms of cell locations, the formula is: (T42–S42)+(G65*S42)

We will continue with the example of female sterilization in the year 2015 to examine the impact of aging out on the number of adopters.

The image on page 35 shows the number of *adopters* needed in 2015 in order to reach a total of 53,758 female sterilization *users* in 2015. We can see that the formula is linked to the number of users in the previous year.



Interpreting the Data: Number of Adopters

In this example, to make up for the numbers of sterilization users who *age out* and to allow for the increase in MWRA in the population base, a total of 8,442 MWRA will need to *adopt* the method in 2015 to raise the overall number of users from 50,352 to 53,758.

Given that the sample projections here pertain to the district level, 8,442 women accessing female sterilization services in one year could have a dramatic impact on the service delivery system. If, for example, only two sites in the district can provide female sterilization services, the 0.12% increase in female sterilization prevalence may not be achievable. Later in this guide, we will revisit this example to examine further how this increase impacts the service delivery system's capacity over time.

In going through the various levels of analysis, it becomes clear that projections are useful in estimating future family planning needs. Looking at an increase in the number of users and adopters raises issues you need to consider, such as:

- What do these numbers mean in terms of commodities and resource requirements?
- Can the current service delivery system handle this type of projected client load?
- Is there a way to move services to lower levels in the service delivery system, so that clients can access services more easily? Would providing some methods in the community free up higher level cadres to offer more LA/PM services, such as IUDs or sterilization?

Before delving deeper into these questions, it will be helpful to look at projections of commodities and of service delivery capacity.

Removals

For most contraceptive methods, discontinuation simply means that the client stopped using the method on his or her own; a client stops taking the pill, for example, or does not return for more injections. However, for the implant and the IUD, a woman who wishes to discontinue use must return to a health facility to have the device removed by a health professional. For all types of implants, it is important to know how many clients will return to have their device removed each year. By applying the annual discontinuation rates to the number of users for these methods, we can estimate the number of clients who will want removals for each type of implant each year. Reality √ will automatically calculate the number of implant removal clients, based on the number of users and the discontinuation rates.[9]

[9] Version 2 of Reality √ does not calculate the annual number of removals for the IUD, given the method's potential long-term use (10 or more years), compared with the potentially shorter use of implants (five years or less).

Removal Data That You Have to Input

- There are no removal data that need to be input into Reality √, although you can change the discontinuation rates for each method, if you prefer. Provided that CPR and population data are entered above, the tool will automatically generate removal estimates.

Reality √ will automatically populate the green "method-specific discontinuation rates" cells, based on the discontinuation rates above in the Adopters section. If you choose to use different data, just erase the values in the green cells and enter your values.

	A	G
85	**ANNUAL REMOVAL CLIENTS**	**Method Specific Discontinuation Rates**
86		
87		
88	Implant - Norplant, Jadelle	0.28
89	Implant - Implanon	0.48
90	Implant - Sino-implant (II)	0.28

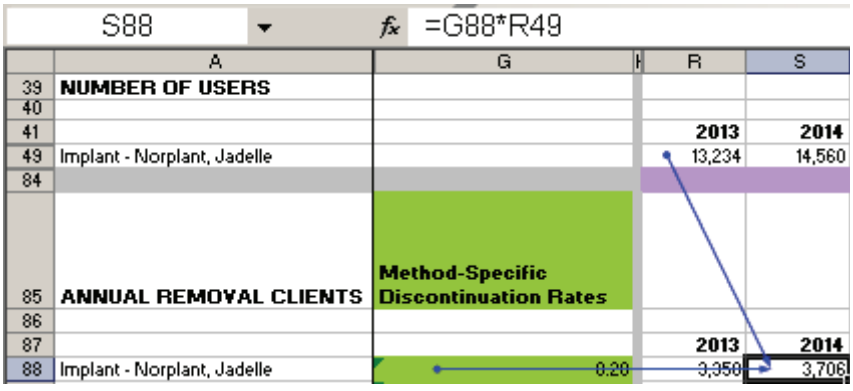
To illustrate the link between users and the number of removals, see the example below. There are 13,234 implant users in 2013 (Cell R49). This total represents a total of the number of women who continued to use the implant between 2012 and 2013, the number who contributed to the increase in implant prevalence between 2012 and 2013, and the increase in the number of MWRA in the population base.

To calculate implant removals, we simply apply the discontinuation rate to the number of users for an estimate of the number of users who will discontinue in the year.

The formula for calculating removals is:

Number of users
*
Discontinuation rate

In this example, the cell formula is G88*R49.



Note that in the example at the top of page 37, if we decrease discontinuation rates in the green cells, even only slightly, we will have fewer removal clients to serve each year. In this example, if the discontinuation rate decreases to 0.18 from 0.28, we will have more than 1,000 fewer removal clients in 2014 than in the previous year.

S88 =G88*R49

	A	G	R	S
39	**NUMBER OF USERS**			
40				
41			**2013**	**2014**
49	Implant - Norplant, Jadelle		13,234	14,560
84				
85	**ANNUAL REMOVAL CLIENTS**	**Method-Specific Discontinuation Rates**		
86				
87			**2013**	**2014**
88	Implant - Norplant, Jadelle	0.18	2,154	2,382

Commodities and Supplies

Now that the numbers of users and adopters have been calculated, it is important to determine the corresponding numbers of commodities for short- and long-acting methods and supplies for permanent methods that are needed.

Commodities and supplies for LA/PMs are simply equal to the number of *adopters* in any given year. Commodity and supply needs for the IUD, the implant, female sterilization, and male sterilization are all calculated in this way. (See below for example.) SDM is also calculated in this way.

T106 =T76

	A	G	R	S	T
62	**NUMBER OF ADOPTERS (NEW USERS)**	**Method-Specific Discontinuation Rates**			
63					
64			**2013**	**2014**	**2015**
72	Implant - Norplant, Jadelle	0.28	4,620	5,031	5,457
76	Female Sterilization	0.10	7,572	8,002	8,442
91					
92	**COMMODITIES**	**Commodities Per User**			
93					
94			**2013**	**2014**	**2015**
102	Implant - Norplant, Jadelle		4,620	5,031	5,457
106	Female Sterilization		7,572	8,002	8,442

Commodity and supply needs for resupply methods are calculated differently, in that such calculations are based upon the numbers of *users*. Thus, it is important for your program to account for wastage, due especially to the fact that pills and condoms may be received but not used. (This is not done for the injectable, since it acts for three full months once received.) Pill users are typically handed three cycles at a time, and with high discontinuation rates, many of these cycles are never used. The same is true of condom supplies given to adopters and users.

The image at the top of page 38 shows a sample of the calculations for pills and injectables.

- In this section of the worksheet, for resupply methods, you will have to input the estimated number of commodities a user would need over a one-year period. You can base these figures upon local CYP factors, or you can use the international estimates included here (Ross et al., 2005).
  - These figures are input into cells G95–99.

S98 =S45*$G98

	A	G	Q	R	S
39	**NUMBER OF USERS**				
40					
41			**2012**	**2013**	**2014**
42	Pill		60,963	64,702	68,551
44	Injectable - three-month		191,149	208,809	227,189
45	Male Condom		55,265	60,290	65,518
92	**COMMODITIES**	**Commodities Per User**			
93					
94			**2012**	**2013**	**2014**
95	Pill cycles	15	914,440	970,523	1,028,266
97	Injectable - three-month	4	764,597	835,238	908,757
98	Male Condom	120	6,631,020	7,234,080	7,862,143

- Pill commodity needs are estimated by calculating that a user will require approximately 15 cycles per year. Therefore, the number of *users* in a given year is multiplied by 15.
  - Formula=Q42*$G95
- Condom commodity needs are calculated by multiplying the number of *users* in a given year by 120 (the international estimate for the number of condoms a condom user will use annually).
  - Formula=R45*$G98
- Injectable (three-month) commodity needs are calculated by multiplying the number of *users* in a given year by four (the number of injections a user will need annually).
  - Formula =S44*$G97

Costs

Utilizing commodity and supply data, you can project how much commodities will cost, or if you have more comprehensive data on the total per-user cost of providing a service, you can project the total cost to your program to provide the services. This is crucial to adequately plan and advocate for the resources needed for family planning.

Cost Data That You Have to Input

International average per-unit commodity and supply costs are included as defaults in Reality √. However, you can use local cost estimates for each method and input those costs into cells G117–131. Here, international costs are shown in U.S. dollars (UNFPA, 2005; USAID, 2007). (See Appendix B: Commodity Costs [page 79] for more information.) It is important to note that the commodity costs indicated

	A	G
114	**COMMODITY AND SUPPLY COSTS**	**Commodity and Supply Cost Per Unit (US$)**
115	***Average international commodity and supply costs are included as defaults in Reality √. If you have local commodity and supply costs, or if you have more complete per-unit service delivery costs (that include labor, overhead, etc.), simply replace the default costs in Cells C117 through C131 with your own costs.***	
116		
117	Pill Cycles	0.21
118	Injectable - two-month	0.86
119	Injectable - three-month	0.87
120	Male Condom	0.025
121	Female Condom	0.77
122	Standard Days Method	1.16
123	Any Trad. or Folk	
124	Implant - Norplant, Jadelle	22.00
125	Implant - Implanon	24.00
126	Implant - Sino-implant (II)	8.00
127	IUD	0.37
128	Female Sterilization	9.09
129	Male Sterilization	4.95
130	Other 1	
131	Other 2	

here are costs for commodities only; they do not include additional service delivery and distribution expenses, such as personnel salaries or transport costs to deliver the commodities. These are also only estimates based on averages. To capture additional costs, such as shipping or wastage, you could mark up these costs by a certain percentage, based on your local program estimates. The following web sites can also be useful sources for current per-unit commodity costs:

- The International Drug Price Indicator Guide, produced by Management Sciences for Health, available at: http://erc.msh.org/mainpage.cfm?file=1.0.htm&module=DMP&language= English
- The RH Interchange site, produced by the Reproductive Health Supplies Coalition, available at: http://rhi.rhsupplies.org/rhi/index.do?locale=en_US
- USAID family planning costs, on the JSI/DELIVER Project's Family Planning Product Catalog, available at: http://deliver.jsi.com/dhome/mycommodities/productcatalog /fpproducts
- UNFPA's Negotiated Prices for Reproductive Health Commodities, available at: www.unfpa.org/public/cache/offonce/procurement/pid/3239

You could also estimate the total service cost (labor, supplies, overhead, etc.) by changing the default values in the green cells to the per-unit cost of providing each service. An Excel-based database of per-unit service costs in a variety of countries and service delivery modes (based on a literature review conducted by UNFPA and the Family Planning Costing Initiative) is included on the Reality √ CD-ROM. Note that this database does not contain costs for all countries, and the costing studies identified in the literature review used a variety of methodologies to estimate the per-unit cost. This database, however, can be a useful tool for estimating the per-unit cost; average per-method costs are located in separate sheets, and study year, country, factors included in cost estimate, and service delivery mode are also listed. If, for example, you wanted to look at per-visit implant costs, you could select the "implant" worksheet in the Excel workbook to view the different countries and delivery modes in which costing studies have been conducted for implants (see image below). A median per-visit cost is calculated at the bottom of the list of studies.

Country	Year	Delivery System/ Provider	Direct cost Only Incl. Overhead cost	Average cost per visit/user (US$) 2006 $	Drugs & Suppl.	Personnel	Fac. Overhead	Capital cost	Other	Implant	% of Total Cost	(Direct) Labor Cost	% of Total Cost	Fac. Overhead	% of Total Cost	Capital Cost	% of Total Cost	Other
USA	1995			**$545.53**														
Mexico	1995	Clinic	x	**$57.01**	x	x												
Zimbabwe	1995	Clinic	x	**$54.36**	x	x												
Mali	1994	Clinic	x	**$40.41**	x	x				$38.35	95%	$2.06	5%					
Mali	1994	Clinic	x	**$37.71**	x	x				$37.32	99%	$0.39	1%					
Thailand	1991	Hospital	x	**$35.00**	x	x				$33.59	96%	$1.42	4%					
MEDIAN				**$47.39**						**$37.32**	96%	**$1.42**	4%	**$0.00**		**$0.00**		**$0.00**

Other costing tools include:

- The EngenderHealth Cost Analysis Tool, available at: www.engenderhealth.org/pubs/quality/cope.php
- UNFPA's Reproductive Health Costing Tool, which can be requested at: www.unfpa.org/public/site/global/lang/en/pid/3595#costing

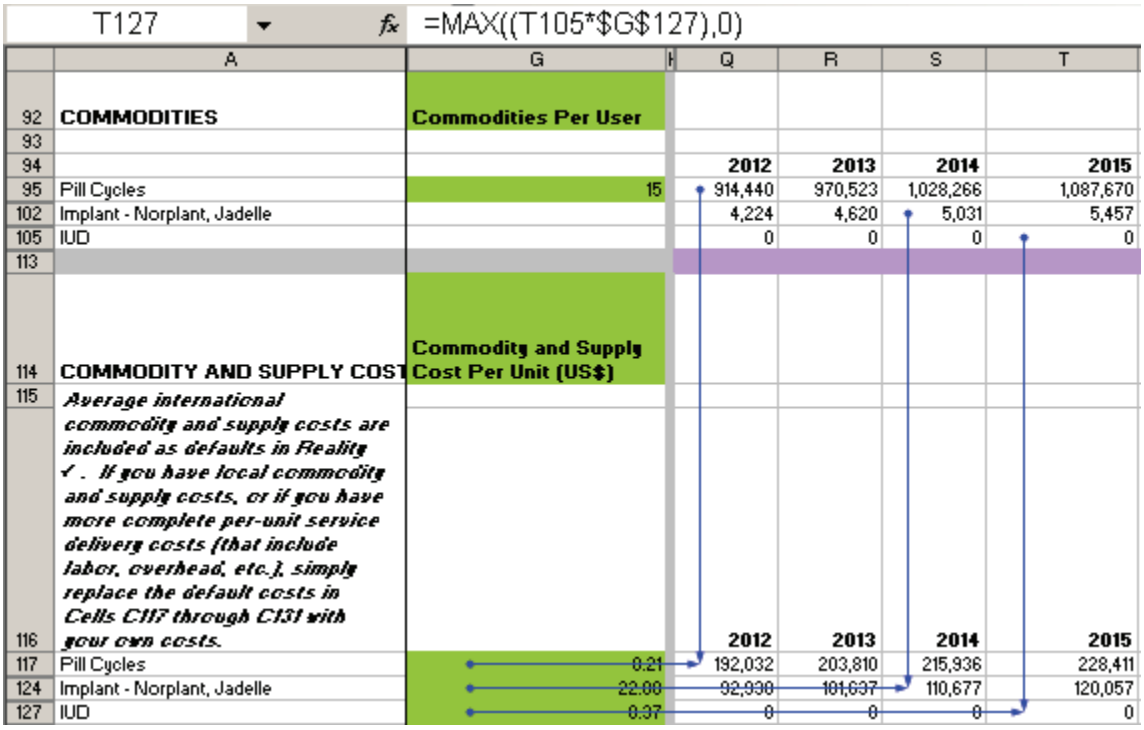
When inputting local costs, be sure to specify the currency type in cell G114.

Sterilization and implant costs appear to be the highest among all methods, but it important to keep in mind that these are one-time costs. When the one-time LA/PM commodity costs are compared over a future-year basis against the costs of resupply methods, LA/PMs are among the most cost-effective methods, and they reduce the need for resupply.

The costs included here are based on international estimated costs for a commodity or procedure. The commodity costs in Column G are fixed costs. Therefore, the projected costs do not account for future inflation.

When projecting commodity costs, please keep in mind that as with all figures projected, Reality √ was designed to project estimates to help inform future programmatic decision making; the tool can provide insight on possible future scenarios only based on the estimated figures and the best data available at the time the projections were run.

The commodity costs for all methods are linked directly to the projected commodity requirements for that year. The following image shows the link between cost and the number of commodities.



	A	G	Q	R	S	T
92	**COMMODITIES**	**Commodities Per User**				
93						
94			**2012**	**2013**	**2014**	**2015**
95	Pill Cycles	15	914,440	970,523	1,028,266	1,087,670
102	Implant - Norplant, Jadelle		4,224	4,620	5,031	5,457
105	IUD		0	0	0	0
113						
114	**COMMODITY AND SUPPLY COST**	**Commodity and Supply Cost Per Unit (US$)**				
115	***Average international commodity and supply costs are included as defaults in Reality √. If you have local commodity and supply costs, or if you have more complete per-unit service delivery costs (that include labor, overhead, etc.), simply replace the default costs in Cells C117 through C131 with your own costs.***					
116			**2012**	**2013**	**2014**	**2015**
117	Pill Cycles	0.21	192,032	203,810	215,936	228,411
124	Implant - Norplant, Jadelle	22.00	92,930	101,637	110,677	120,057
127	IUD	0.37	0	0	0	0

Interpreting the Data: Commodities and Costs

In assessing costs, it is important to think about your existing commodity and logistics system. For example:

- Has your program experienced stock-outs recently?
- How do commodities actually reach service delivery points?
- Who is responsible for contraceptive commodity procurement?

We can also examine the summary data in terms of the cumulative costs of "any modern method" and "all LA/PMs." This will help you to budget and advocate for the necessary resources to program for family planning services in the future. It can also help you to assess which methods are cost-effective for your program. It is important to keep in mind that costs alone should not drive the program; cost must be balanced with protecting a client's right to a choice of methods.

The final level of analysis in Reality √ will concern the service delivery capacity of your program.

Service Provision: Estimated Number of Clients per Month

As you have gone through the process of calculating your past trend and projecting that trend, you have probably thought about the current service delivery capacity of your program. Now it is time to look at estimates for the impact of the projected increases in numbers of users and of adopters at the service delivery points. It is very important to keep in mind that it is difficult to fully capture client load for resupply methods, due to factors such as discontinuation and community access to pills and condoms. The estimates for LA/PMs are much more reliable, due to the fact that these are provider-dependent methods; therefore, clients will have to visit service delivery sites to access the methods.

Service Provision Data That You Have to Input

In this section of the worksheet, you can input current figures for the *estimated number of sites able to provide service* (Column G) and the *estimated client visits per year* (Column F). The image to the left shows those cells.

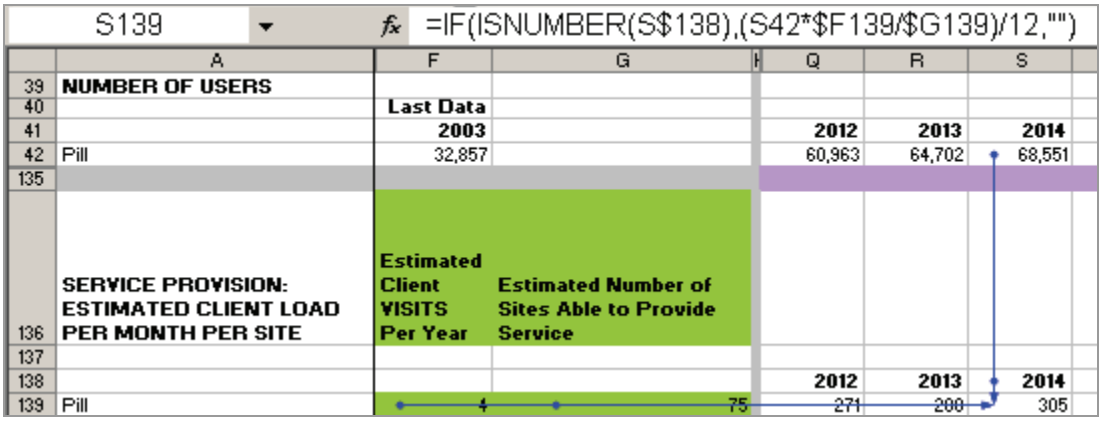
	A	F	G
136	**SERVICE PROVISION: ESTIMATED CLIENT LOAD PER MONTH PER SITE**	**Estimated Client VISITS Per Year**	**Estimated Number of Sites Able to Provide Service**
137			
138			
139	Pill	4	75
140	Injectable - two-month	6	55
141	Injectable - three-month	4	55
142	Male Condom	4	75
143	Female Condom	4	55
144	Standard Days Method	1	55
145	Any Trad. or Folk		
146	Implant - Norplant, Jadelle	1	15
147	Implant - Implanon	1	15
148	Implant - Sino-implant (II)	1	15
149	IUD	1	20
150	Female Sterilization	1	5
151	Male Sterilization	1	1
152	Other 1		
153	Other 2		

The estimated number of visits per year for all methods can be adjusted based on your current policies. For example, if pill resupply clients can receive six packages of pills per visit, then you would input two visits per year for that method in Cell F139. Or, if your current policy requires IUD clients to come in for a follow-up visit, you could input a 2 in Cell F149.

The formula for calculating the number of clients per month per site for resupply methods is:

$$\frac{\text{(Number of users * number of visits per year)}}{\text{(Number of sites able to provide service)}}{12}$$

See the following image for an example.



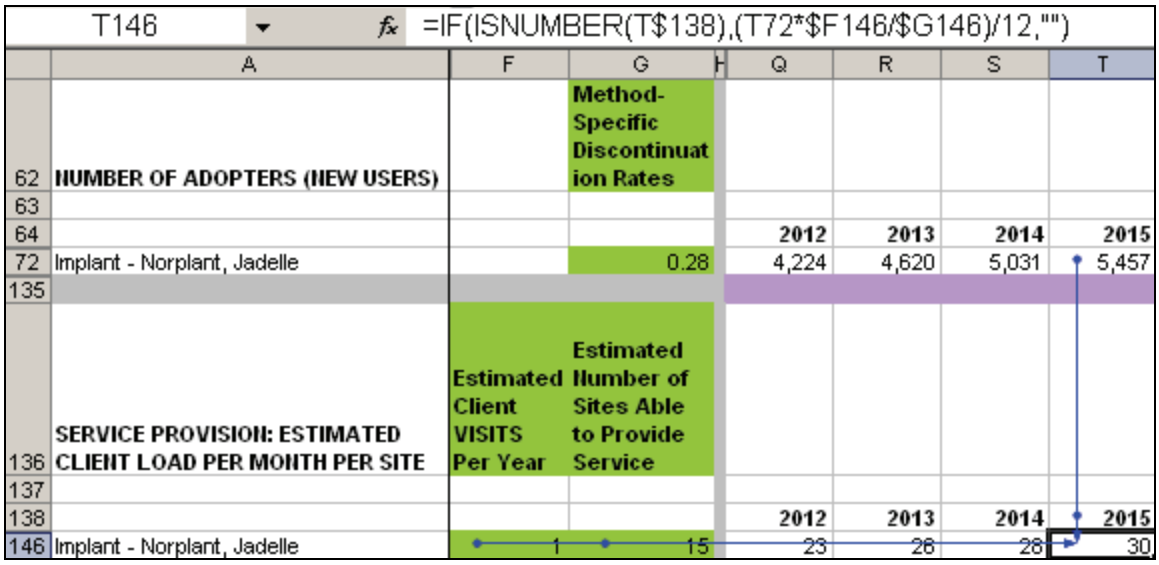
Given that pills and condoms may be available through community distribution points such as pharmacies, it is up to you as to how you want to use this field. If X numbers of community health workers provide condoms in your geographic region of interest, for example, X could be the number of condom sites, as each worker is essentially operating as a service site. Given that LA/PMs are provider-dependent and that clients have to access those methods at the site level, to be consistent, you may want to solely focus on site-level distribution here (versus trying to account for community-level distribution as well).

Very Important Qualification

It is extremely important again to point out that estimates for resupply methods are based on the number of *users*, and therefore the service delivery estimates will actually be higher for these methods, due to clients who begin using a method but then discontinue. These figures only take into account the number of *users* (i.e., women who continue using a method for a 12-month period) and not those who start using a method but then discontinue. When examining these figures and analyzing the estimates, consideration must be given to the number of people who will visit sites and who subsequently will discontinue use of their method (thus having an impact on client load).

Because LA/PMs and SDM (also known as CycleBeads) do not require resupply visits, the estimated client load for these methods is calculated by using the number of *adopters* in a given year instead of the number of users. The formula for these methods is:

$$\frac{\text{(Number of adopters * number of visits per year)}}{\text{(number of sites able to provide service)}}{12}$$



Because the estimated client load figures for LA/PMs are linked to adopters, and because adopters are visiting a site for one insertion or procedure (which is provider-dependent), these estimates will be more accurate than the estimates for short-acting methods.

Interpreting the Data: Service Delivery Capacity

When looking at the data for service provision, it is again important to think about issues that have been mentioned previously, such as the number of service sites or trained providers, etc. The existing and expected service capacity may not be sufficient to provide for the projected client load; therefore, more resources and interventions may be required to increase the capacity to provide those services.

If we look at the estimated monthly number of implant clients (in this example, Norplant/Jadelle) who will be served at each site capable of providing implants in the year 2015 (Cell T146), the estimated service delivery capacity for each site is approximately 30 clients per month. The daily client load could then be calculated; this would mean approximately one implant client per day per site. This may prompt a need to think about issues such as:

- Is it feasible to offer implant services to more clients?
- What is the best schedule for implant services—daily, or perhaps only once a week?

Estimated Number of Removal Clients per Month

Remember that nearly all clients who use implants will return to have their devices removed either when they decide to discontinue use of the method or when its effective period has lapsed; and these removals will contribute to the client load placed on a facility. Just as it is important to understand the client load per service site for contraceptive initiation and for follow-up visits, it is important to have a sense of how many clients will return to have their implants removed each year. In addition to the monthly service projections calculated above, these projections should be considered when the feasibility of a goal is being considered.

Implant Removal Data That You Have to Input

- No data entry is required for this section; Reality √ will automatically calculate the estimated number of removal clients per service site per month, based on the number of facilities previously entered. However, if you know that not all of these sites are able to provide removal services, feel free to adjust to the number of facilities that provide removal services.

The formula for calculating the number of removal clients per month per site for implants is:

$$\frac{\text{(Number of removals/number of sites able to provide service)}}{12}$$

	A	G
155	**REMOVAL CLIENTS PER FACILITY PER MONTH**	**Estimated Number of Sites Able to Provide Service**
156		
157		
158	Implant - Norplant, Jadelle	12
159	Implant - Implanon	12
160	Implant - Sino-implant (II)	12

See the following example, in which monthly removal service volume is estimated; this is very similar to the way in which overall monthly service volume is estimated in the cells above.

	A	G	S	T	U
155	**REMOVAL CLIENTS PER FACILITY PER MONTH**	**Estimated Number of Sites Able to Provide Service**			
156					
157			**2014**	**2015**	**2016**
158	Implant - Norplant, Jadelle	12	17	18	20
159	Implant - Implanon	12	0	0	0
160	Implant - Sino-implant (II)	12	0	0	0

Note in the following example that if we are able to increase even slightly the number of service sites able to provide implant removals, the monthly removal load per site decreases.

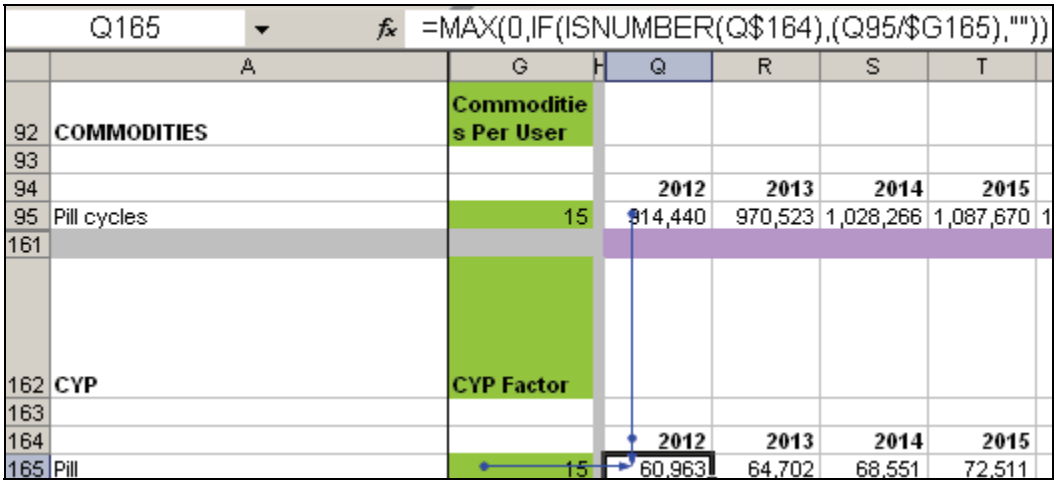
	A	G	S	T	U
155	**REMOVAL CLIENTS PER FACILITY PER MONTH**	**Estimated Number of Sites Able to Provide Service**			
156					
157			**2014**	**2015**	**2016**
158	Implant - Norplant, Jadelle	15	13	15	16
159	Implant - Implanon	12	0	0	0
160	Implant - Sino-implant (II)	12	0	0	0

Couple-Years of Protection

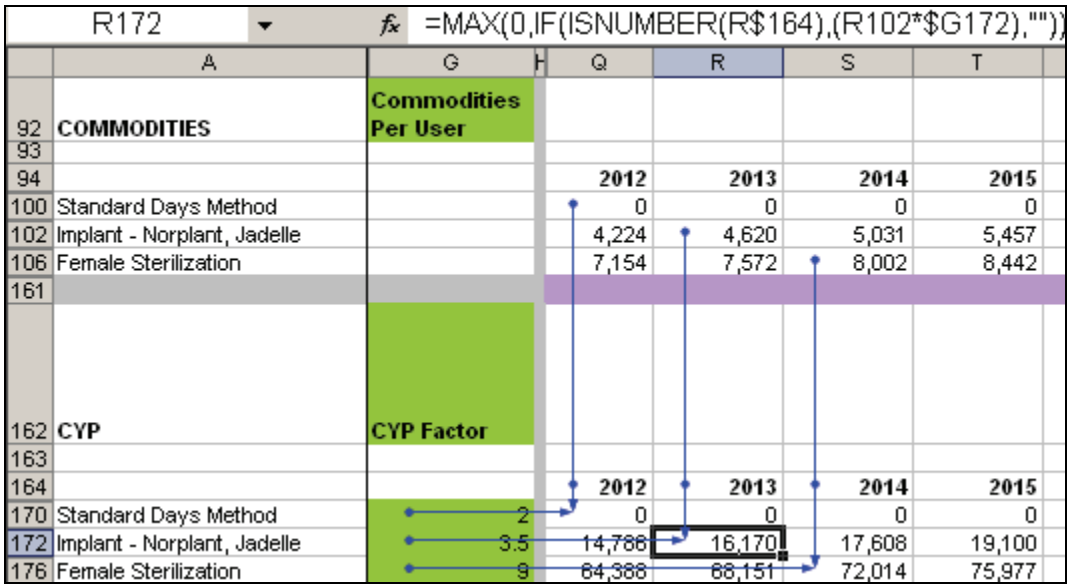
Reality √ is designed to estimate CYP. In Column G, rows 165–179, you can input the CYP factor used in your program. (See Appendix D [page 101] for more informa-tion on CYP.) You can see from the image to the right that the CYP factors for the pill, injectables, and male and female condoms are the same as the commodity estimates used earlier. The CYP factor currently used by USAID for SDM is 2 per trained and confirmed adopter, while the CYP factor for LA/PMs is based on average length of usage (as described in the section on discontinuation). The CYP figures calculated for each LA/PM adopter are captured all at once, within the year of method adoption.

	A	G
162	**CYP**	**CYP Factor**
163		
164		
165	Pill	15
166	Injectable - two-month	6
167	Injectable - three-month	4
168	Male Condom	120
169	Female Condom	120
170	Standard Days Method	2
171	Any Trad. or Folk	
172	Implant - Norplant, Jadelle	3.5
173	Implant - Implanon	2.1
174	Implant - Sino-implant (II)	3.5
175	IUD	3.5
176	Female Sterilization	9
177	Male Sterilization	9
178	Other 1	
179	Other 2	

This section of the worksheet is linked to commodities. The following example shows that CYP for the pill in 2012 is calculated by dividing pill commodities in 2012 (Cell Q95) by the CYP factor (in this case, 15—Cell G165).



While CYP for resupply methods is calculated by dividing the commodities by the CYP factor, CYP for LA/PMs and for SDM is calculated by multiplying commodities by the CYP factor; this is because one commodity (such as one IUD insertion) provides longer protection for a client than the resupply methods. For example, we can look at the implant in 2013 (Cell R172) and see (page 46) that it is linked to implant commodities in 2013 (Cell R102). Thus, the formula for calculating CYP for implants in 2013 equals (R102*G172).



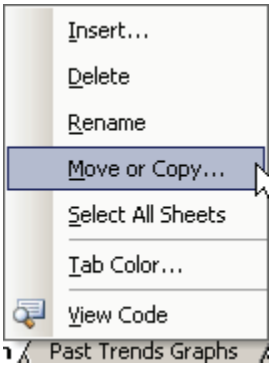
R172	=MAX(0,IF(ISNUMBER(R$164),(R102*$G172),""))					
	A	G	Q	R	S	T
92	**COMMODITIES**	**Commodities Per User**				
93						
94			**2012**	**2013**	**2014**	**2015**
100	Standard Days Method		0	0	0	0
102	Implant - Norplant, Jadelle		4,224	4,620	5,031	5,457
106	Female Sterilization		7,154	7,572	8,002	8,442
161						
162	**CYP**	**CYP Factor**				
163						
164			**2012**	**2013**	**2014**	**2015**
170	Standard Days Method	2	0	0	0	0
172	Implant - Norplant, Jadelle	3.5	14,786	16,170	17,608	19,100
176	Female Sterilization	9	64,388	68,151	72,014	75,977

As throughout the use of the tool, keep in mind that all figures are rounded for ease of use in working with the data. Therefore, there may be minor discrepancies in the projections due to rounding.

As you have now completed the calculations and projections on your past trend, you can move next to testing scenarios. But before jumping into the next section, be sure to review the data sheet and think about what the results suggest. Examining these assumptions will help you consider scenarios to test in the next steps of the process.

Occasionally, you may want to examine trends for multiple geographic scenarios (i.e., multiple regions or districts in one country). It may be most convenient to create all of these scenarios in a single Excel workbook, rather than create one workbook for each area.

To create copies of Reality √ in multiple tabs of the same workbook, simply right-click on the *Past Trend Continuation* sheet (as shown to the right) and select "Move or Copy…" Check the "Create a copy" box at the bottom of the box that will appear, and an exact copy of the entire sheet will appear in the workbook. To rename this new sheet to distinguish it from any others, simply right-click, select "Rename," and enter the title of your choice. (The new title should be something that distinguishes this sheet from the others.) If you copy a sheet in which you have already entered values, make sure to delete these values from the new sheet, unless they are the same (i.e., if you are running multiple scenarios in the same geographic area).



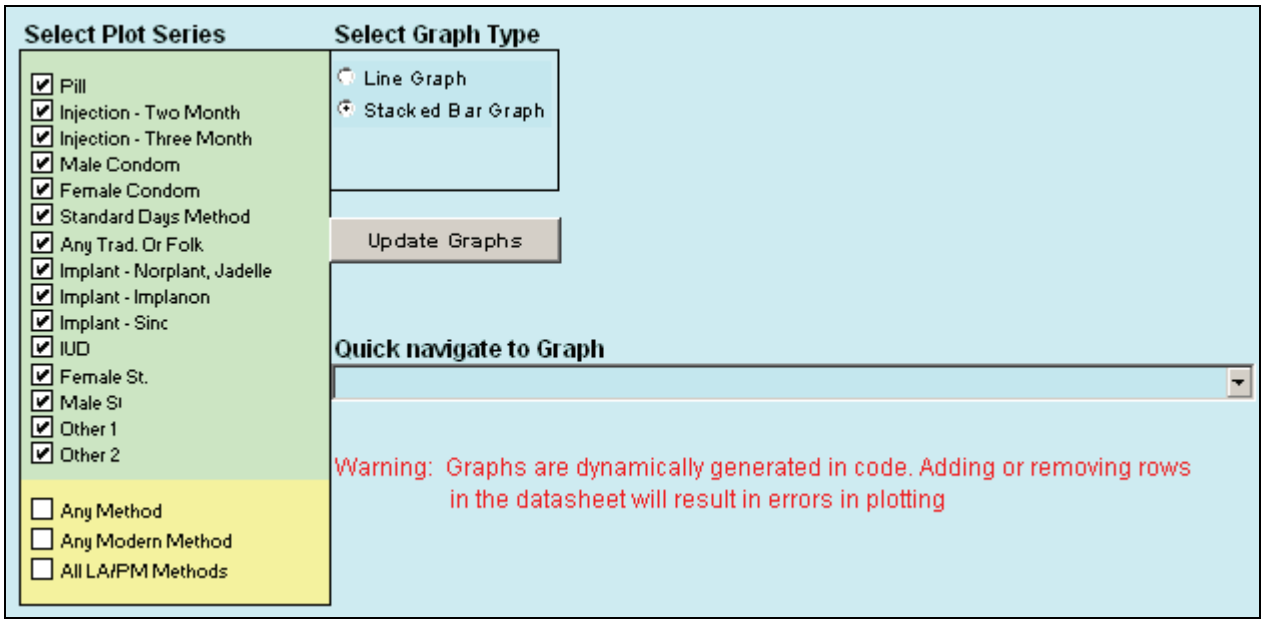
The same process can be repeated for the *Future Goals* sheet.

Running CPR Quickly

If you wanted to run a quick calculation to view a projection for *any method CPR* or for any *modern method CPR*, you could use the "pill" option as a proxy; you would do this if you did not want to run details on methods individually and instead just wanted a quick overview of *any method* or *any modern method* CPR and users. To do this, you would have to detail in your assumptions that you are using the "pill" option as a proxy for *any method* or *any modern method* CPR, and you would input the CPR into the "pill" cells E14 and F14. You would input the number 0 into all other methods (or leave them blank). You would also input your projected population data, so that you could project estimates on the number of users. Please keep in mind that you would then only be able to look at projections for CPR and users. Data on adopters, commodities, commodity and supply costs, service delivery, and CYP would not be applicable for this type of proxy calculation.

Graphs

- For each output in Reality √ (CPR, Users, Adopters, etc.), a customizable graph is generated in the separate Graph tab. Graphs will not be generated if Macros are not enabled in Excel.
- In the blue section at the top of the Graphs sheet (see image below), note that you can select:
  - Which method(s) to include in the graphs. This may be particularly useful when values for high-prevalence methods skew the scale of the graph so that lower-prevalence methods are barely visible; you can deselect the high-prevalence methods to view only those with lower prevalence.
    - In the yellow area, you can select to show only the summaries of all methods, all modern methods, or all LA/PMs. Note that selecting these features will show an aggregate sum of all methods, modern methods, or LA/PMs combined; to view information for each method, select the individual methods of interest from the checkboxes.
      - For most graphs, you can select which type of graph to generate: Reality √ can generate either line graphs or stacked bar graphs to represent your data visually.
- Note that after making your selections of the type of graph and which methods to include, you must select the "Update Graphs" button to apply the changes throughout. If you return to the worksheet and edit the data in any way, be sure to select the "Update Graphs" button when returning to the Graph tab, to ensure that all changes are incorporated.



- The graphs show the projections; they show the trends and help expose data input or assumptions that are incorrect. For example, if you see sharp increases or decreases in the lines (versus a steady trend), you may need to question how realistic or achievable those increases or decreases will be in the future.
- Note that if you edit the data you input, you will need to select the "Update Graphs" button to regenerate the graphs.
- You may wish to change the titles of graphs; this can be done by clicking anywhere within the graph's title box, then changing the title as you wish. Graphs can then be copied and pasted into Microsoft Word documents by right-clicking, selecting "copy," and selecting "paste" once you have opened the document into which you would like to paste the graph.
- Graph colors and patterns can also be adjusted by right-clicking on each line or column, then selecting the "Format Data Series" option.
- Note that once you have pasted the graph into the second document, you may not be able to edit the title, colors, or other features.

2. Future Goals: Projecting by Testing Scenarios

Overview

Now that you have calculated past trends and have explored what things would look like if the past trends continued, it is time to test alternative CPR and method-mix scenarios. This will allow you to input data based on previously established CPR goals or based on scenarios that you would like to test. You can also use past trend data to inform the goals that you will test.

Testing scenarios is really about the art of programming for family planning. Being able to input and test various method prevalence rates will help you to create projections that can inform programmatic decisions. For example, the data will help guide your decision-making process on factors such as:

- Resource utilization
- Interventions needed to reduce discontinuation
- Future commodity needs requiring attention
- Provider capacity needed to meet projected service estimates
- Demand-side interventions needed to address barriers to contraceptive uptake
- Potential impact of CPR and method-mix scenarios

The worksheet for testing future projection scenarios is very similar to the one used to calculate the past trend. The concepts that apply to that worksheet apply to this one as well. The biggest difference is that here, you are testing various CPR scenarios by inputting your scenarios or goals on the far right side. The concepts are identical to those for calculating past trends, so you can refer back to the previous sections of the guide for clarification. Note that this time, however, the annual changes come from the difference between the goal (far right side of the worksheet) and the starting value. Previously, the changes were projected from the past trend.

Source Data and Assumptions Data That You Have to Input

The same instructions previously noted have to be followed for inputting the source data and assumptions (see below for an illustrative example). The assumptions outlined in this section of the worksheet are shown in Row 4:

	A	B C D E F G H I J K L
1	**Date:**	24-May-10
2	**Title of Scenario:**	District X in Country X: Future Goals Scenario #1
3	**Geographic Level/Name of Analysis (i.e. national, region, district):**	District X
4	**Assumptions:**	2000-2005 Trend Calculation used for short-acting methods except Pill, whose trend of rapid growth is slowed to achieve a prevalence of 14 in 2015. Scenario is set to attain a 40% Modern Method Prevalence in 2015. This is based on an increase in LA/PM use while setting re-supply methods similar to past trends (see worksheet 1 for this trend). Traditional methods are set to decrease to 7. Male St. is set to rise to 1% from 0%, Female St. is set to increase to 2.5, Implant (in this case Jadelle will be used) is set to 1. IUD will achieve 2015 prevalence of 2.75. Overall, these goals mean a projected 1.15 point increase in modern method CPR per year from 2004-2015.
5	**Based Upon WRA or MWRA:**	MWRA
6	**Population Data Source:**	UN Population Division: World Population Prospects
7	**CPR Data Source:**	1998 DHS and 2003 DHS

Future Goal CPR Data That You Have to Input

Your CPR data points must be entered into this worksheet in the same way as in the previous worksheet. The biggest exception is that here, you will *only* input your most recent survey or estimated data points (Column D) (see below).

	A	C	D
13	**CPR**	**Final Year to Be Projected**	**Most Recent Data Point**
14		**2015**	**2003**
15	Pill		3.20
16	Injectable - two-month		
17	Injectable - three-month		6.40
18	Male Condom		1.90
19	Female Condom		
20	Standard Days Method		
21	Any Trad. or Folk		4.60
22	Implant - Norplant, Jadelle		0.30
23	Implant - Implanon		
24	Implant - Sino-implant (II)		
25	IUD		0.20
26	Female Sterilization		2.00
27	Male Sterilization		0.00
28	Other 1		
29	Other 2		

These data are important, as they provide the baseline from which we start; if they are inaccurate, they will result in inaccurate projections of annual numbers of users, adopters, etc., for the years between the baseline and the final (target) year. These baseline data can be obtained in several ways:

- The demographic data from the most recent DHS or other population-based survey can be used if they are very recent (ideally within the last 1–2 years) or if you have reason to believe that the contraceptive prevalence for each method has not changed since these data were collected.
- If you believe that past trends have continued since the most recent population-based survey, you can use the data generated in the *Past Trend Continuation* worksheet. If, for example, CPR data are from 2000 and 2005 but you need to generate a future scenario with a baseline of 2010, and if you believe the rates of growth achieved between 2000 and 2005 continued through 2010, you can do a past trend analysis in the *Past Trend Continuation* worksheet, then use the CPR figures generated for 2010 as the base in the *Future Goals* worksheet. You would need to note in the "Assumptions" section that the 2010 baseline data assume that the 2000–2005 trends continued through 2010.

You also will need to input the Final Year to Be Projected (Cell C14). This scenario is being projected through 2015. For example, if you wanted to project to 2020, you would enter 2020 in that cell.

Once you have input the year and the CPR data points, you must input your projected goals. To do this, input your Final Year Projected Prevalence into the green cells in column C. This worksheet can also project up to 25 years after the year of your initial starting point, but you can choose the final year you would like to project. For example, if you would like project to 2020, you would input 2020 in Cell C14. Column AD automatically recognizes the final year and adjusts the columns in the middle of the worksheet to stop at 2019.

For this example, 2015 will be the final year projected. The image below shows that column O contains figures for 2014 and that column AD shows figures for 2015. All of the columns in between are hidden for visual purposes.

	A	C	D	O	AD
13	**CPR**	**Final Year to Be Projected**	**Most Recent Data Point**		**Input Final Year Projected Prevalence Here**
14		**2015**	**2003**	**2014**	**2015**
15	Pill		3.20	4.30	4.40
16	Injectable - two-month			-	
17	Injectable - three-month		6.40	10.62	11.00
18	Male Condom		1.90	2.54	2.60
19	Female Condom			-	
20	Standard Days Method			0.28	0.30
21	Any Trad. or Folk		4.60	4.60	4.60
22	Implant - Norplant, Jadelle		0.30	2.13	2.30
23	Implant - Implanon			-	
24	Implant - Sino-implant (II)			-	
25	IUD		0.20	1.12	1.20
26	Female Sterilization		2.00	3.10	3.20
27	Male Sterilization		0.00	0.92	1.00
28	Other 1			-	
29	Other 2			-	

Please keep in mind that you can test any scenario you would like in a relatively rapid manner. For example, you can input projected prevalence based on previously established national family planning goals, or you can test other scenarios, based on variants such as:

- Increasing male sterilization
- Increasing injectable use
- Decreasing traditional method use
- Increasing implant use
- Introducing SDM

In the example shown below, the various projected method prevalence rates are set to add to overall modern method prevalence of 26% and any-method prevalence of 30.6%. In this scenario, LA/PM use is set to rise to 7.7%, while resupply methods are set to increase at a pace similar to the past trend.

One minor difference in this worksheet is that the average annual change is to the right side of the spreadsheet. The right side shows the differences in measurement between the final year projected and the first year projected (see below).

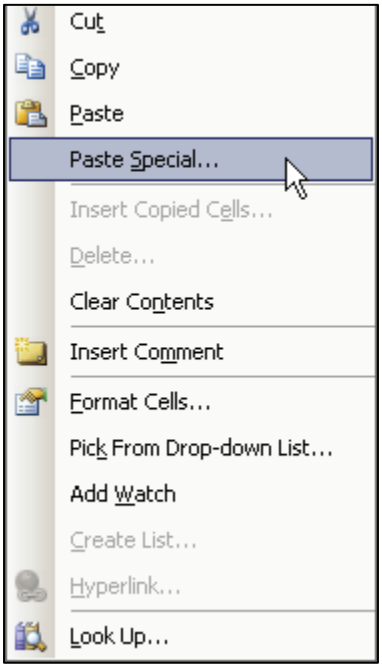
	A	D	AD	AE	AF
13	**CPR**	**Most Recent Data Point**	**Input Final Year Projected Prevalence Here**		**Average Annual Increase/Decrease Based on Projected Scenario (Based on Final Year Projected and Most Recent Data Point)**
14		**2003**	**2015**		
15	Pill	3.20	4.40		0.10
16	Injectable - two-month				0.00
17	Injectable - three-month	6.40	11.00		0.38
18	Male Condom	1.90	2.60		0.06
19	Female Condom				0.00
20	Standard Days Method		0.30		0.03
21	Any Trad. or Folk	4.60	4.60		0.00
22	Implant - Norplant, Jadelle	0.30	2.30		0.17
23	Implant - Implanon				0.00
24	Implant - Sino-implant (II)				0.00
25	IUD	0.20	1.20		0.08
26	Female Sterilization	2.00	3.20		0.10
27	Male Sterilization	0.00	1.00		0.08
28	Other 1				0.00
29	Other 2				0.00
30					
31	Any Method	18.60	30.60		1.00
32	Any Modern Method	14.00	26.00		1.00
33	All LA/PMs	2.50	7.70		0.43

This information can give you a sense of the magnitude of change from your first year projected and your last (in this case, 2004 to 2015).

The *Method Mix Calculators* Excel file on the Reality √ CD-ROM includes several tools that may be useful for estimating future goal scenarios. These include:

1. **The Method Mix Calculator**
   Occasionally, you might want to test a future scenario in which overall CPR increases to a certain total while the current method mix remains constant. Based on the current CPR for each method and the percentage increase in total CPR you would like to see, this calculator will generate a future CPR for each method, while holding each method's share of the method mix constant.
2. **The Percentage Share of Method Mix Calculator**
   You may also want to test scenarios in which each method comprises a certain percentage of the method mix. This calculator allows you to indicate a future total CPR as well as the percentage of the method mix that you would like each method to comprise. The tool then generates a future CPR for each method; it offers the option of entering information about the current CPR for each method, to compare the current CPR and method mix with your target CPR and mix.

To copy and paste values from either of the method mix calculators as a future goal scenario in Reality √, you must use the "Paste Special" option in Excel; if you paste the figures in without selecting this option, they will appear as the formulas used in the calculators.



To use Paste Special:

1. Copy the values that you wish to transfer.
2. Right-click on the cells in which you would like to enter the values.
3. Select the "Paste Special" option, as shown to the right.
4. Select the "Values and Numbers Format" option, then select "OK."

Calculating Future CPR While Holding Method Mix Constant

CPR Data That You Have to Input

- Current method-specific CPR
- Desired total CPR (could be based on the current total CPR plus a reasonable amount of increase)

All green fields are *required* data entry fields. Simply enter the desired total CPR at the top, and enter the current CPR for each method. If you do not have data for a particular method, simply leave the corresponding green CPR cell blank. The calculator will then estimate the current and future percentage shares of the method mix (which will be equal), as well as the future CPR for each method for which you have entered data.

See the following example, in which we increase overall CPR to 45% while holding each method's share of the method mix constant.

The future CPR for each method generated in the fourth column (Future CPR) could then be copied and pasted as the future goal in Reality √.

What would you like the total CPR to be?				
45				
	Current CPR	% share of current method mix	Future CPR	% share of future method mix
Pill	11.90	34%	**15.28**	34%
Injectable - two-month		0%	**0.00**	0%
Injectable - three-month	7.40	21%	**9.50**	21%
Male Condom	0.70	2%	**0.90**	2%
Female Condom		0%	**0.00**	0%
Standard Days Method	12.70	36%	**16.31**	36%
Any Trad. or Folk	0.50	1%	**0.64**	1%
Implant - Norplant, Jadelle		0%	**0.00**	0%
Implant - Implanon		0%	**0.00**	0%
Implant - Sino-implant (II)		0%	**0.00**	0%
IUD	1.25	4%	**1.60**	4%
Female Sterilization	0.40	1%	**0.51**	1%
Male Sterilization	0.20	1%	**0.26**	1%
Other 1		0%	**0.00**	0%
Other 2		0%	**0.00**	0%
Any method	35.05	1.00	45.00	1.00
Any modern method	34.55	0.99	28.44	0.99
All LAPMs	1.85	0.05	2.76	0.05

Calculating the Desired Method Mix

CPR Data That You Have to Input

- Current CPR for each method (optional, but encouraged)
- Desired total CPR (could be based on the current total CPR plus a reasonable amount of increase)
- Percentage of the total method mix that you would like each method to comprise. This is where entering the current CPR in the second column would be useful; you can look at the current method-mix breakdown and determine which methods' share you would like to increase and which should decrease.

First, enter your desired total CPR in the green cell in the first row. (As before, you can only enter data in the green cells.) Enter the current CPR for each method in the green cells in the second column (this is optional, but recommended). In the fourth column, enter the percentage of the total method

mix that you would like each method to comprise; note that these percentages that you enter should add up to 100.00% in Cell D19.

See the following example, in which we will increase total CPR from 35.05% to 45% and increase LA/PMs' share of the method mix from 5% to 16%.

What would you like the total CPR to be?	45.00			
	Current CPR (optional)	Current share of total method mix	What percentage of the total method mix would you like this method to comprise?	Future CPR
Pill	11.90	33.95%	30.00%	13.50
Injectable - two-month		0.00%		0.00
Injectable - three-month	7.40	21.11%	21.00%	9.45
Male Condom	0.70	2.00%	3.00%	1.35
Female Condom		0.00%		0.00
Standard Days Method	12.70	36.23%	30.00%	13.50
Any Trad. or Folk	0.50	1.43%		0.00
Implant - Norplant, Jadelle		0.00%	4.00%	1.80
Implant - Implanon		0.00%		0.00
Implant - Sino-implant (II)		0.00%		0.00
IUD	1.25	3.57%	6.00%	2.70
Female Sterilization	0.40	1.14%	3.00%	1.35
Male Sterilization	0.20	0.57%	3.00%	1.35
Other 1		0.00%		0.00
Other 2		0.00%		0.00
Any method	35.05	100.00%	100.00%	45.00
Any modern method	34.55	99%	100.00%	45.00
All LA/PMs	1.85	5%	16.00%	7.20

The future CPRs for each method generated in the last column (Future CPR) can then be copied and pasted as the future goal in Reality √ using the Paste Special option.

Data entry and interpretation for most of the rest of the worksheet is similar to that in the *Past Trend Continuation* worksheet.

In this worksheet, calculations for the section on adopters and for all sections below it begin with the first year projected—in this example, 2004. That is because they are based on the difference between users from one year to the next. Here, 2003 adopters cannot be calculated, since there is no 2002 column to yield changes from 2002 to 2003 (see the empty 2003 cells in the image on page 55).

	A	C	D	E	F
40	**NUMBER OF USERS**				
41			**2003**	**2004**	**2005**
42	Pill		32,857	35,159	37,608
43	Injectable - two-month		0	0	0
44	Injectable - three-month		65,714	72,271	79,272
45	Male Condom		19,509	20,864	22,307
46	Female Condom		0	0	0
47	Standard Days Method		0	266	553
48	Any Trad. or Folk		47,232	49,009	50,881
49	Implant - Norplant, Jadelle		3,080	4,972	7,005
50	Implant - Implanon		0	0	0
51	Implant - Sino-implant (II)		0	0	0
52	IUD		2,054	3,019	4,056
53	Female Sterilization		20,536	22,374	24,335
54	Male Sterilization		0	888	1,844
55	Other 1		0	0	0
56	Other 2		0	0	0
57					
58	Any Method		190,981	208,821	227,861
59	Any Modern Method		143,749	159,812	176,979
60	All LA/PMs		25,670	31,252	37,239
61					
62	**NUMBER OF ADOPTERS (NEW USERS)**	**Method-Specific Discontinuation Rates**			
63			**2003**	**2004**	**2005**
64	Pill	0.50		18,730	20,029
65	Injectable - two-month	0.50		0	0
66	Injectable - three-month	0.50		39,414	43,137
67	Male Condom	0.50		11,110	11,875
68	Female Condom	0.50		0	0
69	Standard Days Method	0.40		266	393
70	Any Trad. or Folk	0.65		32,478	33,728
71	Implant - Norplant, Jadelle	0.28		2,754	3,426
72	Implant - Implanon	0.48		0	0
73	Implant - Sino-implant (II)	0.28		0	0

Additional Data That You Have to Input in the Future Goals Worksheet

The information noted below should be entered in the same way as it was in the *Past Trend Continuation* worksheet. Please see those sections of the guide for more information.

Population Data

The number of MWRA (or WRA) can be copied and pasted from the previous spreadsheet.

Number of Adopters

You will need to input local method-specific discontinuation rates, or you can utilize the international averages previously provided.

Commodity and Supply Costs

You will need to input the cost estimates, or you can utilize the international rates previously provided. You could also enter the total service cost (the cost to serve one user, including supplies, commodities, labor, overhead, etc.) and estimate the total cost of family planning services.

Service Provision: Estimated Number of Clients per Month

You will need to input the *estimated number of sites able to provide services* and the *estimated number of visits per client per year*. Given that in this worksheet you are projecting based on future goals, you can test different service delivery options, such as increasing the number of sites that can provide a service or

reducing the number of visits that a resupply client would need. Note that the grey button allows you to input the values you entered in the Past Trends tab; however, you should consider whether your number of service delivery sites will increase with your intervention. If so, you should enter separate values.

Service Provision: Estimated Number of Implant Removal Clients per Month
You will need to input the *estimated number of sites able to provide removal services*. Note that this information will not necessarily be the same as in the Service Provision section above, as some sites able to provide implant insertions may not have a provider trained in removals.

Method-Specific Annual Failure Rates
You will need to enter annual failure rates for each method, or you can use the international rates already included.

Annual Pregnancy Rate for Nonusers of Family Planning
This figure is used to estimate the number of family planning users who would have become pregnant in any given year if they were *not* using contraception. A default rate is provided (850/1000), but you can enter a different rate, if you so choose.

Abortion Rate
This figure is used to estimate the number of abortions that would have occurred if all current family planning users were *not* using contraception and had experienced an unintended pregnancy. We assume that a certain percentage of women experiencing an unintended pregnancy would have sought an abortion.

Spontaneous Abortion Rate
When calculating the number of unintended births averted by providing contraception, an estimate of the percentage of pregnancies that result in a spontaneous abortion/miscarriage is needed. A default international value is provided, but this can be changed, if more local information is available.

Maternal Mortality Ratio
A country-specific maternal mortality ratio must be entered to generate an estimate of the number of maternal deaths averted.

Infant Mortality Rate
A country-specific infant mortality rate must be entered to generate an estimate of the number of infant deaths averted.

Child Mortality Rate
A country-specific child mortality rate must be entered to generate an estimate of the number of child deaths averted.

Interpreting Your Data

In analyzing your projected scenario and goals, it will be important to think about all of the concepts previously discussed.

The following considerations, which have been discussed throughout the guide, can help you interpret your results:

- In terms of an international standard, relatively strong family planning programs can experience a 1.5% annual increase in CPR. How does your projected scenario compare with this number?
- What factors have to be in place to reach the goals?
- Will a renewed commitment to family planning be required at various policy levels to reach the goals?
- What resources will be needed to meet the goals, and where will they be needed?
- What communication campaigns or community activities will be required to increase method utilization?
- What should the family planning priorities be? Should training more providers in LA/PMs be a priority?
- How can contraceptive logistics systems be strengthened to improve supply lines and access to services?
- Do champion policymakers, providers, community leaders, or other family planning advocates exist? How can the program identify and nurture them to strengthen a focus on family planning?
- Should new family planning methods be introduced in your program?
- Is a policy change needed in terms of the level of cadre allowed to provide a specific method, so that services are easier to access at the community level?
- Does your program offer a balanced method mix?
- Is there a balanced distribution of use by method? If not, what factors may be at play, and what action is needed?

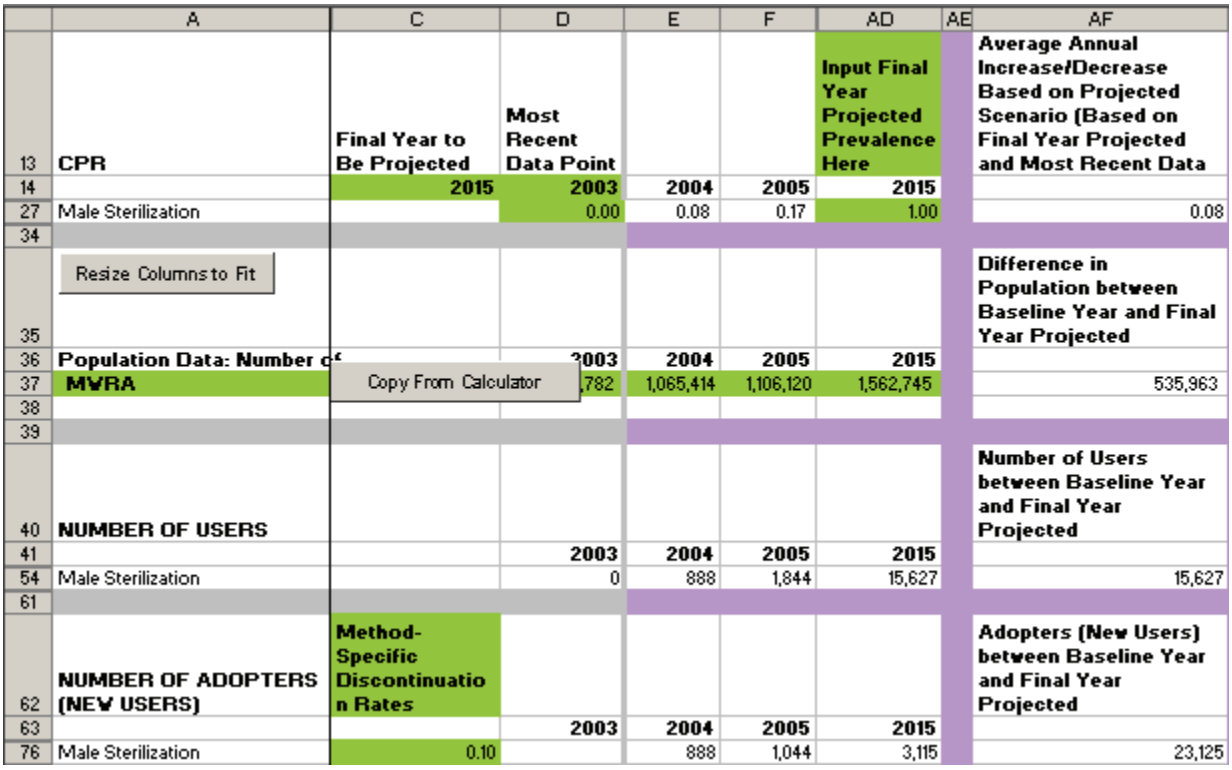
As an example, let's look at vasectomy prevalence in the projected scenario shown below.

	A	C	D	AD
13	**CPR**	**Final Year to Be Projected**	**Most Recent Data Point**	**Input Final Year Projected Prevalence Here**
14		**2015**	**2003**	**2015**
15	Pill		3.20	4.40
16	Injectable - two-month			
17	Injectable - three-month		6.40	11.00
18	Male Condom		1.90	2.60
19	Female Condom			
20	Standard Days Method			0.30
21	Any Trad. or Folk		4.60	4.60
22	Implant - Norplant, Jadelle		0.30	2.30
23	Implant - Implanon			
24	Implant - Sino-implant (II)			
25	IUD		0.20	1.20
26	Female Sterilization		2.00	3.20
27	Male Sterilization		0.00	1.00
28	Other 1			
29	Other 2			
30				
31	Any Method		18.60	30.60
32	Any Modern Method		14.00	26.00
33	All LA/PMs		2.50	7.70

To determine what this means in terms of services, we will have to look at information on trained providers, commodities, and estimated monthly client load.

For the context of this example, let's say that a family planning programmer has decided that male sterilization is an underutilized method and determines that there is a need to offer this service. Male sterilization prevalence was 0.00% in 2003, and the family planning programmer decides that the projected future goal in 2015 should be 1.00%. We can see that this will require an average annual increase of 0.08 percentage points (Cell AF27).

What does this mean in terms of numbers of users and adopters? The following image shows what a 1.00% vasectomy prevalence in 2015 translates into. The illustration shows the first three years projected (2004–2006) and the final year projected (2015).



	A	C	D	E	F	AD	AE	AF
13	**CPR**	**Final Year to Be Projected**	**Most Recent Data Point**			**Input Final Year Projected Prevalence Here**		**Average Annual Increase/Decrease Based on Projected Scenario (Based on Final Year Projected and Most Recent Data**
14		**2015**	**2003**	**2004**	**2005**	**2015**		
27	Male Sterilization		0.00	0.08	0.17	1.00		0.08
34								
35	Resize Columns to Fit							**Difference in Population between Baseline Year and Final Year Projected**
36	**Population Data: Number o**		**3003**	**2004**	**2005**	**2015**		
37	**MWRA**	Copy From Calculator	,782	1,065,414	1,106,120	1,562,745		535,963
38								
39								
40	**NUMBER OF USERS**							**Number of Users between Baseline Year and Final Year Projected**
41			**2003**	**2004**	**2005**	**2015**		
54	Male Sterilization		0	888	1,844	15,627		15,627
61								
62	**NUMBER OF ADOPTERS (NEW USERS)**	**Method-Specific Discontinuation Rates**						**Adopters (New Users) between Baseline Year and Final Year Projected**
63			**2003**	**2004**	**2005**	**2015**		
76	Male Sterilization	0.10		888	1,044	3,115		23,125

The projected number of users is 888 in 2004 (Cell E54) and is 15,627 in 2015. The projected number of adopters rises from 888 in 2004 (Cell E76) to 3,115 in 2015.

As can be seen below, in 2004, the commodity and supply cost of providing male sterilization services is projected to be $4,395 for the 888 procedures. In 2015, due to an increase in vasectomy adoption, that cost would be $15,421 for 3,115 procedures. The estimated number of sites where male sterilization services would be available is set at just one here, but this assumption can be based on either current service capacity or a goal of offering male sterilization services at just one site in the district. In this example, the single site would have its monthly client load increase from 74 in 2004 to 260 in 2015. The example also projects the estimated CYP associated with each year.

	A	C	D	E	F	AD	AE	AF
91	**COMMODITIES**	**Commodities Per User**						**Total Number of Commodities between Baseline Year and Final Year Projected**
92								
93			**2003**	**2004**	**2005**	**2015**		
106	Male Sterilization			888	1,044	3,115		23,125
112								
113	**COMMODITY AND SUPPLY COSTS**	**Commodity and Supply Cost Per Unit (US$)**						**Total Amount of Commodity and Supply Costs between Baseline Year and Final Year Projected**
114								
115	***Average international commodity and supply costs are included as defaults in Reality √. If you have local commodity and supply costs, or if you have more complete per-unit service delivery costs (that include labor, overhead, etc.), simply replace the default costs in Cells C116 through C130 with your own costs.***		**2003**	**2004**	**2005**	**2015**		
128	Male Sterilization	4.95		4,395	5,170	15,421		114,469
134								
135	**SERVICE PROVISION: ESTIMATED CLIENT LOAD PER MONTH PER SITE**	**Estimated Number of Sites Able to Provide Service**						**Difference in Number of Clients Served Monthly between Final Year Projected and First Year Projected**
136		Use Past Trend Values						
137			**2003**	**2004**	**2005**	**2015**		
150	Male Sterilization	1		74	87	260		186
160		Use Past Trend Values						
161	**CYP**	**CYP Factor**						**Total number of CYP Achieved between the Baseline Year and Final Year Projected**
162								
163			**2003**	**2004**	**2005**	**2015**		
176	Male Sterilization	9		7,991	9,400	28,038		208,126

In analyzing the projections, one may conclude that it is not realistic to expect one site to provide 260 male sterilization procedures in one month; this suggests that service capacity needs to be expanded to meet the projected caseload. Decision makers would have to plan and provide for:

- Trained providers
- Equipment for the procedure
- A small initial client load, so that providers can practice and build their skills
- Possible negative community perceptions of male sterilization
- Resources needed to launch a male sterilization program
- Potential location of services (e.g., will there be mobile services?)

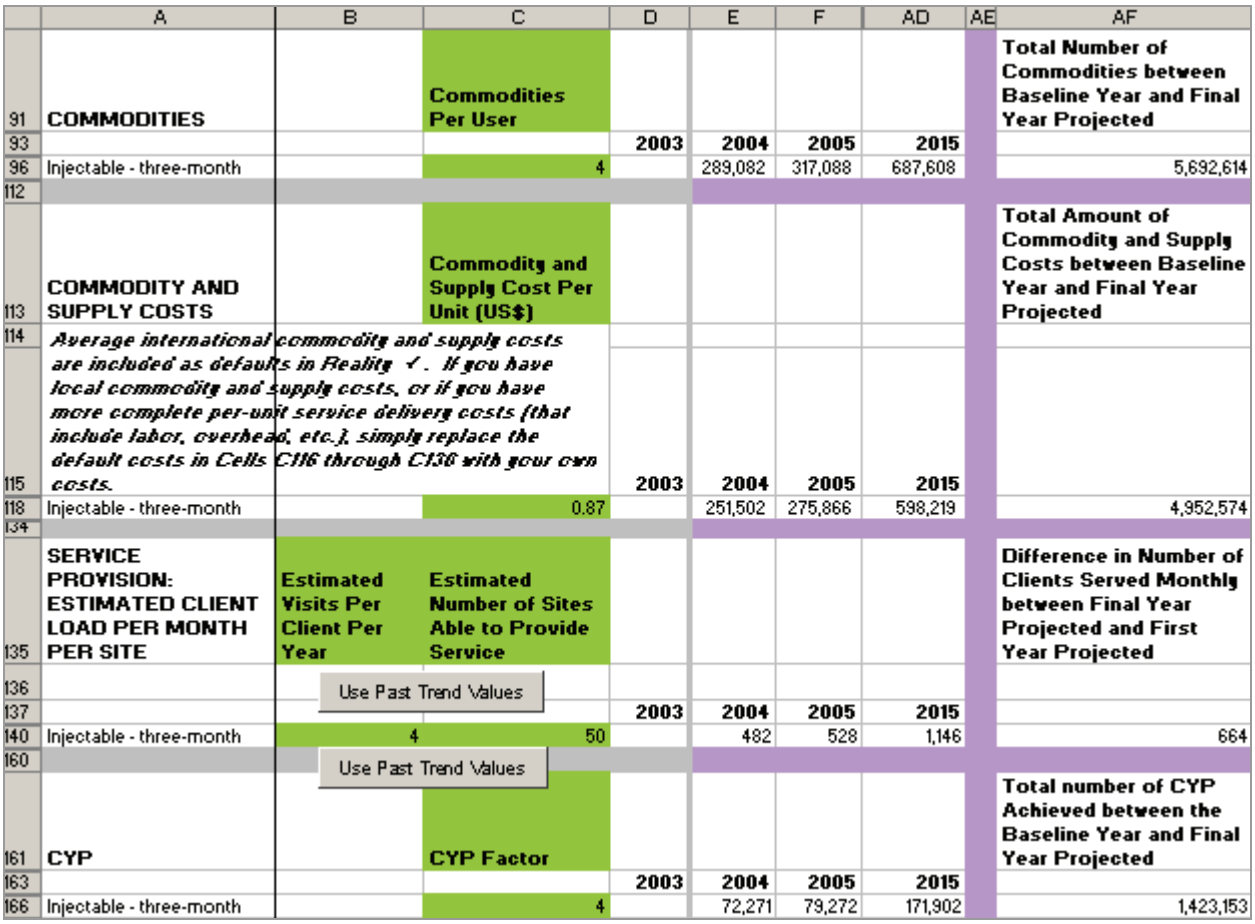
Drawing upon the concepts explained in previous sections of the guide will help you analyze your data and the scenarios you would like to test. You can copy the *Future Goals* worksheet to run as many projections and scenarios as you would like. To build on the previous example, you may want to see how the results change if male sterilization services are offered at three sites in the district. Running various goals and scenarios will allow you to make programmatic decisions based on sound data and assumptions.

Before concluding, we can look at a resupply method as an example. Imagine that a family planning programmer decides that use of the three-month injectable will rise to 11% by 2015, from 6.4% in 2003. This would be an approximate annual increase of 0.38 percentage points (Cell AF17).

What does this increase mean in terms of numbers of users and adopters? The following image shows us that this average increase of 0.38 percentage points per year will result in close to 100,000 more users (Cell AF44, formula=AD44–D44) per year by 2015 over initial 2003 projections. It also means that there will need to be a total of more than 760,000 adopters between 2004 and 2015 (Cell AF66, formula=D66–AD66).

	A	C	D	E	F	AD	AE	AF
13	**CPR**	**Final Year to Be Projected**	**Most Recent Data Point**			**Input Final Year Projected Prevalence Here**		**Average Annual Increase/Decrease Based on Projected Scenario (Based on Final Year Projected and Most Recent Data**
14		**2015**	**2003**	**2004**	**2005**	**2015**		
17	Injectable - three-month		6.40	6.78	7.17	11.00		0.38
34								
35	Resize Columns to Fit							**Difference in Population between Baseline Year and Final Year Projected**
36	**Population Data: Number of**	Copy From Calculator	**2003**	**2004**	**2005**	**2015**		
37	**MWRA**		1,026,782	1,065,414	1,106,120	1,562,745		535,963
38								
39								
40	**NUMBER OF USERS**							**Number of Users between Baseline Year and Final Year Projected**
41			**2003**	**2004**	**2005**	**2015**		
44	Injectable - three-month		65,714	72,271	79,272	171,902		106,188
61								
62	**NUMBER OF ADOPTERS (NEW USERS)**	**Method-Specific Discontinuation Rates**						**Adopters (New Users) between Baseline Year and Final Year Projected**
63			**2003**	**2004**	**2005**	**2015**		
66	Injectable - three-month	0.50		39,414	43,137	91,395		764,671

Examining commodities and commodity and supply costs can shed further light on how to plan for injectable supplies, while looking at the projected client load can help assess service delivery capacity planning needs (see the illustration on page 61).



	A	B	C	D	E	F	AD	AE	AF
91	**COMMODITIES**		**Commodities Per User**						**Total Number of Commodities between Baseline Year and Final Year Projected**
93				**2003**	**2004**	**2005**	**2015**		
96	Injectable - three-month		4		289,082	317,088	687,608		5,692,614
112									
113	**COMMODITY AND SUPPLY COSTS**		**Commodity and Supply Cost Per Unit (US$)**						**Total Amount of Commodity and Supply Costs between Baseline Year and Final Year Projected**
114	*Average international commodity and supply costs are included as defaults in Reality √. If you have local commodity and supply costs, or if you have more complete per-unit service delivery costs (that include labor, overhead, etc.), simply replace the default costs in Cells C116 through C138 with your own costs.*								
115				**2003**	**2004**	**2005**	**2015**		
118	Injectable - three-month		0.87		251,502	275,866	598,219		4,952,574
134									
135	**SERVICE PROVISION: ESTIMATED CLIENT LOAD PER MONTH PER SITE**	**Estimated Visits Per Client Per Year**	**Estimated Number of Sites Able to Provide Service**						**Difference in Number of Clients Served Monthly between Final Year Projected and First Year Projected**
136		Use Past Trend Values							
137				**2003**	**2004**	**2005**	**2015**		
140	Injectable - three-month	4	50		482	528	1,146		664
160		Use Past Trend Values							
161	**CYP**		**CYP Factor**						**Total number of CYP Achieved between the Baseline Year and Final Year Projected**
163				**2003**	**2004**	**2005**	**2015**		
166	Injectable - three-month		4		72,271	79,272	171,902		1,423,153

While looking at the projections, however, it is important to remember that these figures are based on *users,* so therefore one must take into account that these figures do not account for discontinuers (who do not count as *users*). Therefore, you must consider the extent to which discontinuation will lead to higher estimates than the projections shown here.

Impact of Family Planning Scenarios

At the bottom of the *Future Goals* worksheet, Reality √ provides estimates of the impact of the tested scenario in terms of:

- Unintended pregnancies averted
- Abortions averted
- Unintended births averted
- Maternal deaths averted
- Infant deaths averted
- Child deaths averted

The data input requirements for this section are relatively light, and some default international values are provided. Note that for settings with larger populations and/or higher mortality rates, these impact numbers will be larger and more impressive than for settings with fewer people and/or stronger health indicators.

Unintended Pregnancies Averted

Reality √ will generate an estimate of the number of unintended pregnancies averted on an annual, per-method basis, as well as a sum of the pregnancies averted by all methods for all years projected.

When calculating the number of unintended pregnancies averted, it is important to consider not only the proportion of women who would have become pregnant if they had not been using their current family planning method, but also the percentage of users who will experience a method failure resulting in an unintended pregnancy.

Therefore, the number of unintended pregnancies averted for each method is calculated as:

(Number of users * Pregnancy rate)
–
(Number of users * Method-specific failure rate)

Unintended Pregnancy Data That You Have to Input

The pregnancy rate refers to the proportion of women of reproductive age who, if not using a family planning method, would become pregnant in a given year. A default international value of 850 per 1,000 WRA (Trussell, 2007) is provided in Cell C184, but this can be changed if more local data are available.

The method-specific failure rates (Cells B186 through B199) indicate the percentage of users of each method who will experience a method failure (become pregnant) in a given year. Default international values are provided (taken from Trussell, 2007), but again, these can be changed if more local data are available. The current default values for typical use are:

- Pill 8.00
- Injectable 3.00
- Male condom 15.00
- Female condom 21.00
- SDM (Arévalo et al., 2002) 5.00
- Any traditional method[10] 27.00
- IUD 0.80
- Implant (any) 0.05
- Female sterilization 0.50
- Male sterilization 0.15

These figures indicate a large variation of effectiveness between methods; while few implant users will experience an unintended pregnancy in a given year (0.05%), approximately one-quarter of traditional method users will become pregnant. Note that these default values refer to typical use of each method.

This calculation assumes that:

- All users are sexually active.
- All users are fertile.
- If not using their current method, users would not be using another method.
- Any pregnancies incurred by current contraceptive users would be unintended.

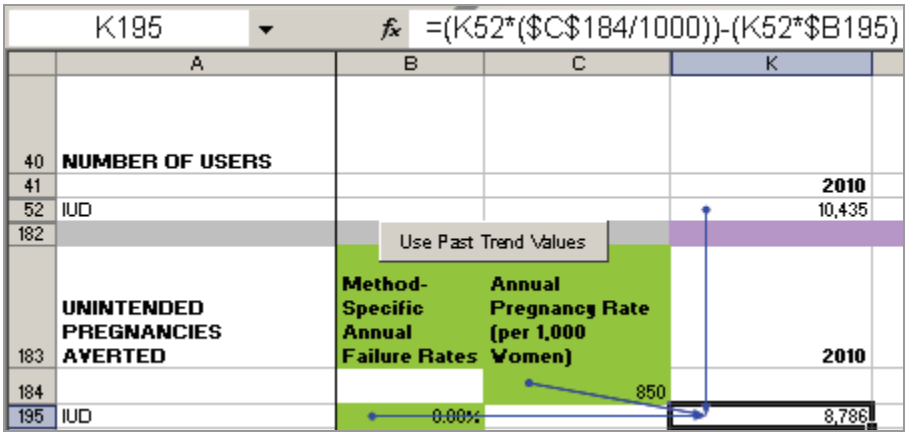
[10] Withdrawal is used as a proxy indicator for the failure rate of any traditional method.

As with other projections in the *Future Goals* worksheet, a sum of all unintended pregnancies averted via any method, by any modern method, and by all LA/PMs is provided at the bottom (Rows 201–203). The total number of all unintended pregnancies averted during all years projected appears in Column AF.

	A	B	C	O	AD	AE	AF
183	**UNINTENDED PREGNANCIES AVERTED**	**Method-Specific Annual Failure Rates**	**Annual Pregnancy Rate (per 1,000 Women)**	**2014**	**2015**		**Total Number of Unintended Pregnancies Averted between the Baseline and Final Years Projected**
184			850				
185	Pill	8.00%		50,215	52,946		471,172
186	Injectable - two-month	3.00%		0	0		0
187	Injectable - three-month	3.00%		132,032	140,960		1,166,986
188	Male Condom	15.00%		26,983	28,442		253,533
189	Female Condom	21.00%		0	0		0
190	Standard Days Method	5.00%		3,337	3,751		21,745
191	Any Trad. or Folk	27.00%		40,463	41,694		419,532
192	Implant - Norplant, Jadelle	0.05%		27,485	30,534		194,011
193	Implant - Implanon	0.05%		0	0		0
194	Implant - Sino-implant (II)	0.05%		0	0		0
195	IUD	0.80%		14,260	15,790		102,769
196	Female Sterilization	0.50%		39,728	42,257		357,618
197	Male Sterilization	0.15%		11,796	13,260		76,878
198	Other 1			0	0		0
199	Other 2			0	0		0
200							
201	Any Method			346,299	369,632		3,064,244
202	Any Modern Method			305,835	327,938		2,644,712
203	All LA/PMs			93,269	101,840		731,276

The following example shows the number of unintended pregnancies averted by the IUD for 2010. In this example, the formula is:

(K52 * [C184/1000]) – (K52 * B195)



Abortions Averted

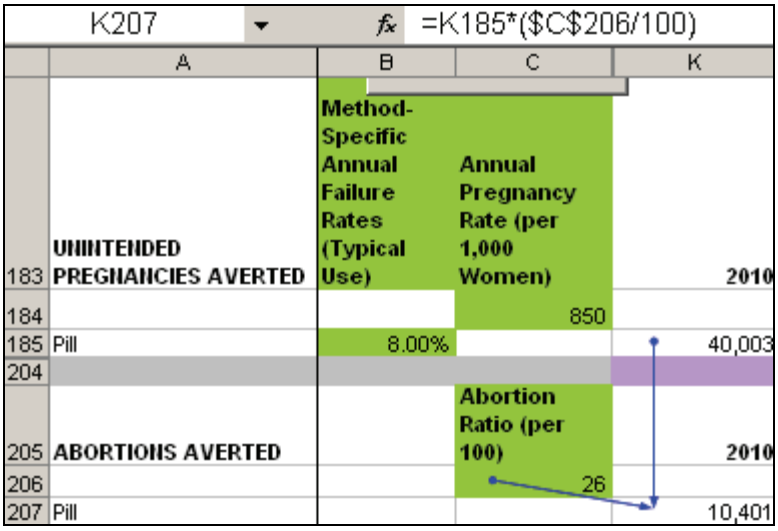
When faced with an unintended pregnancy, many women will seek an abortion, even in contexts in which the procedure is not available under safe and/or legal circumstances. Preventing unintended pregnancies through family planning also prevents abortions.

To calculate the number of abortions averted due to family planning, we must enter a country- or region-specific abortion ratio into Cell C206. The abortion ratio refers to the known percentage of pregnancies that result in induced abortion (as opposed to the abortion rate, which refers to the estimated number of abortions per 1,000 women). Measurement of abortion is difficult, since it is often performed under illegal circumstances and may be a cause of embarrassment to survey respondents. However, estimates of abortion ratios can be found in Appendix G (page 107).

The number of abortions averted is calculated as:

Number of unintended pregnancies averted
*
Abortion ratio/100

In the following example, the number of abortions averted by the use of the pill is calculated for 2010. In this case, the formula for this figure is (K185 * [C206/100]).



Note that in settings in which more abortions are performed, the number of abortions averted will be higher.

Unintended Births Averted

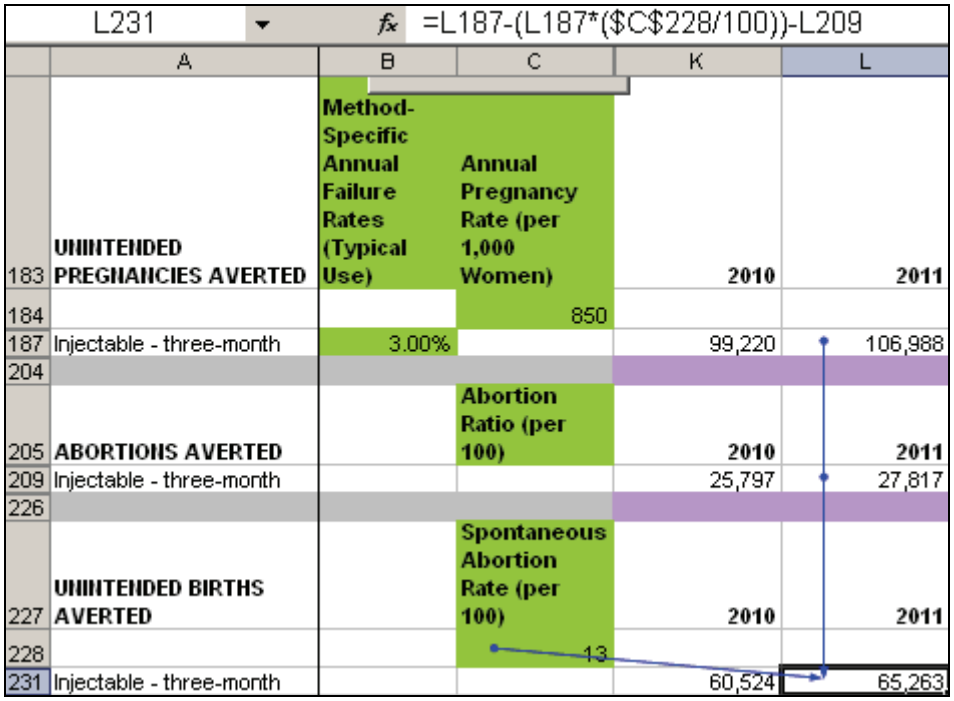
To estimate the number of unintended births averted, we need to consider the number of unintended pregnancies averted, then subtract the numbers that would have ended in induced or spontaneous abortion (miscarriage).

For this section, therefore, we need to include an estimate of the percentage of all pregnancies that will result in a spontaneous abortion. A default value of 13 per 100 is already included in Cell C228 of Reality √, but this can be revised, if you choose to do so.

The number of unintended births averted is calculated via the following formula:

Number of unintended pregnancies averted
–
(Number of unintended pregnancies averted * Spontaneous abortion rate)
–
Number of abortions averted

In the following example, the number of unintended births averted by the injectable in 2010 is calculated by subtracting the numbers of induced and spontaneous abortions from the number of unintended pregnancies.



Maternal Deaths Averted

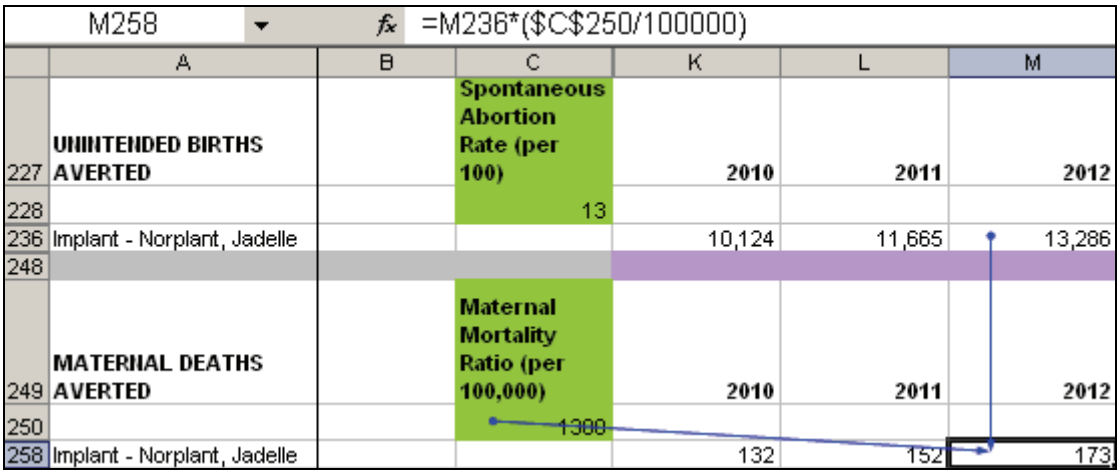
To calculate the number of maternal deaths averted via family planning, we apply the country-specific maternal mortality ratio (deaths per 100,000 live births) to the number of unintended births.

This calculation requires you to input one data point, the country-specific maternal mortality ratio, in Cell C250. A list of country-specific maternal mortality ratios from the World Health Organization can be found in Appendix H (page 109), or you can use values from another source of your choice.

The number of maternal deaths averted is calculated as:

Number of unintended births averted
*
(Maternal mortality ratio/100,000)

In the example on page 66, the number of maternal deaths averted by the hormonal implant in 2012 is calculated via the following formula: (M236 * (C250/100,000).



Note that, just as for all other outputs generated by Reality √, summaries for maternal deaths averted by all methods, by all modern methods, and by all LA/PMs are provided in Rows 267 to 269. Summaries of all years are provided to the right, in column AE.

Infant Deaths Averted

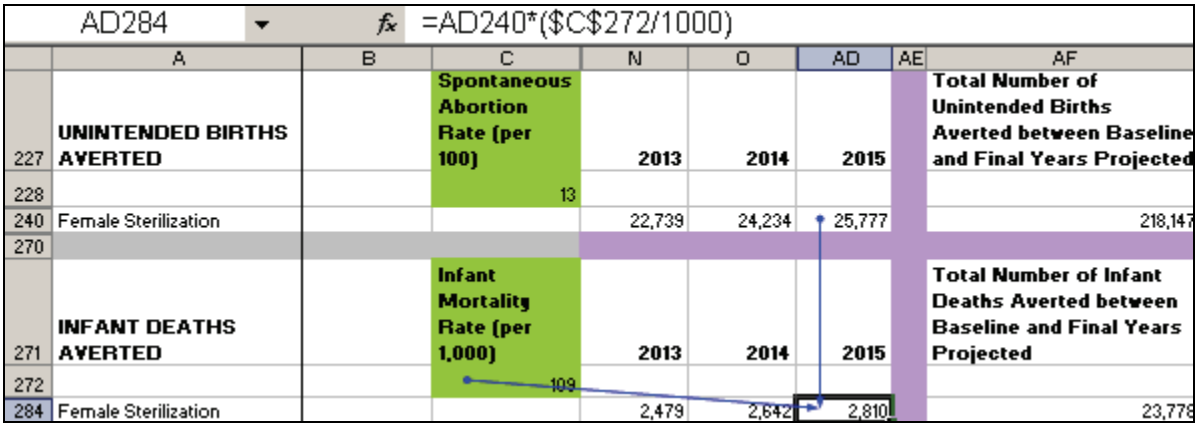
Similar to the calculation of maternal deaths, to calculate the number of infant deaths averted by family planning, we apply the infant mortality rate (the number of infants who will die in their first year of life per 1,000 live births) to the number of unintended births averted.

This calculation requires one data input in Cell C272: the country-specific infant mortality rate. A list of infant mortality rates derived from the DHS can be found in Appendix I (page 113), or you can use a different source of your choice.

The calculation for the number of infant deaths averted by family planning is:

Number of unintended births averted
*
(Infant mortality rate/1,000)

In the example below, the number of infant deaths averted via female sterilization in 2014 is calculated using the formula AD240 * (C272/1,000). Note that summary figures for all years between the baseline and final years are projected in Column AF.



Child Deaths Averted

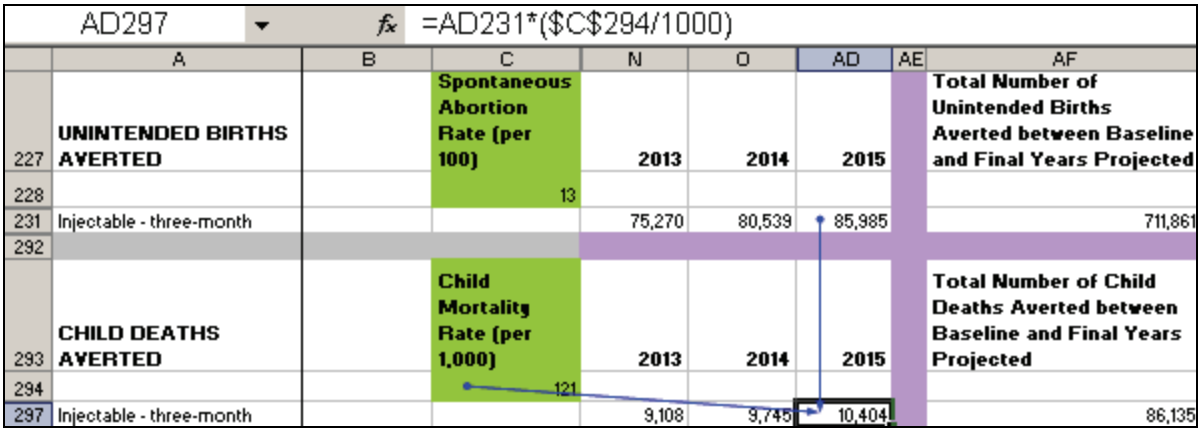
As with maternal and infant deaths, we calculate the number of child deaths by applying the country-specific child mortality rate (the number of children who will die before age 5 per 1,000 live births) to the number of unintended births.

This calculation also requires one data input, the country-specific child mortality rate, in Cell C294. Child mortality ratios obtained from the DHS are provided in Appendix I (page 113), but you can use values from another source, if you so choose.

The calculation for the number of child deaths averted is:

Number of unintended births averted
*
(Child mortality rate/1,000)

In the following example, we calculate the number of child deaths averted by the injectable in 2015 via the formula: AD231 * (C294/1,000)



	A	B	C	N	O	AD	AE	AF
227	**UNINTENDED BIRTHS AVERTED**		**Spontaneous Abortion Rate (per 100)**	**2013**	**2014**	**2015**		**Total Number of Unintended Births Averted between Baseline and Final Years Projected**
228			13					
231	Injectable - three-month			75,270	80,539	85,985		711,861
292								
293	**CHILD DEATHS AVERTED**		**Child Mortality Rate (per 1,000)**	**2013**	**2014**	**2015**		**Total Number of Child Deaths Averted between Baseline and Final Years Projected**
294			121					
297	Injectable - three-month			9,108	9,745	10,404		86,135

The sample programmatic considerations raised throughout the guide can help you think further about these projections and about their implications for your family planning program.

CONCLUSIONS, BIBLIOGRAPHY, AND ADDITIONAL RESOURCES

Conclusions

Now that you have been through the steps for assessing your past trends and for testing future goals, you can generate and use projections to make programmatic decisions more wisely or advocate for more resources to help meet the family planning goals of your program. Exploring alternative projections will help you plan realistically to ensure that service capacity keeps pace with the desire to serve more clients both efficiently and effectively.

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USAID. 2009. *Couple years of protection*. Retrieved August 1, 2009, from www.usaid.gov/our_work/global_health/pop/techareas/cyp.html.

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WHO, UNAIDS, and UNICEF. 2008. T*owards universal access: Scaling up priority HIV/AIDS interventions in the health sector, Progress Report 2008*. Geneva. Available from www.who.int/entity/hiv/pub/towards_universal_access_report_2008.pdf.

Additional Resources

If you would like to learn more about any of the concepts introduced in this guide, please see the following additional resources:

Guttmacher Institute. 2008. Facts on contraceptive use. *In Brief*. New York. Accessed at www.guttmacher.org/pubs/fb_contr_use.html.

Hatcher, R. A., Trussell, J., Nelson, A. L., et al., eds. C*ontraceptive Technology: Nineteenth Revised Edition*. New York: Ardent Media.

Kols, A. 2008. Reducing unmet need for family planning: Evidence-based strategies and approaches. *Outlook*. Volume 25, Number 1.

Pandit, T., and Bornbusch, A. (eds.) 2004. *Contraceptive security: Ready lessons I*. Washington, DC: USAID.

PATH and United Nations Population Fund (UNFPA). 2006. *Meeting the need: Strengthening family planning programs*. Seattle.

Pilz, K., and Bornbusch, A. (eds.) 2008. *Contraceptive security: Ready lessons II*. Washington, DC: USAID.

Smith, R., et al. 2009. *Family planning saves lives*. 4th edition. Washington, DC: Population Reference Bureau.

Singh, S., et al. 2009. *Adding it up: The costs and benefits of investing in family planning and maternal and newborn health*. New York: Guttmacher Institute and UNFPA.

APPENDIX A: Assumptions behind United Nations Population Projections

Note: We are grateful to the United Nations Population Division for their permission to use data from *World Population Prospects: 2008 Revision* in Reality √. Full data are available from: United Nations, Department of Economic and Social Affairs, Population Division. 2009. *World population prospects: The 2008 revision, CD-ROM Edition—Comprehensive dataset in Excel and ASCII formats.* New York. (United Nations publication, Sales No. E.07.XIII.8).

Assumptions Underlying the Results of the 2008 Revision of *World Population Prospects*

The preparation of each new revision of the official population estimates and projections of the United Nations involves two distinct processes: (a) the incorporation of all new and relevant information regarding the past demographic dynamics of the population of each country or area of the world; and (b) the formulation of detailed assumptions about the future paths of fertility, mortality, and international migration. The data sources used and the methods applied in revising past estimates of demographic indicators (i.e., those referring to 1950–2010) are presented online and in Volume III of *World Population Prospects: The 2008 Revision.*

The future population of each country is projected starting with an estimated population for 1 July 2010. Because population data are not necessarily available for that date, the 2010 estimate is derived from the most recent population data available for each country, obtained usually from a population census or a population register, projected to 2010 using all available data on fertility, mortality, and international migration trends between the reference date of the population data available and 1 July 2010. In cases where data on the components of population change relative to the past five or 10 years are not available, estimated demographic trends are projections based on the most recent available data. Population data from all sources are evaluated for completeness, accuracy, and consistency and are adjusted as necessary.[11]

To project the population until 2050, the United Nations Population Division uses assumptions regarding future trends in fertility, mortality, and international migration. Because future trends cannot be known with certainty, a number of projection variants are produced. The following paragraphs summarize the main assumptions underlying the derivation of demographic indicators for the period starting in 2010 and ending in 2050. A more detailed description of the different assumptions will be available in Volume III of *World Population Prospects: The 2008 Revision.*

The 2008 revision includes eight projection variants. The eight variants are: low; medium; high; constant-fertility; instant-replacement-fertility; constant-mortality; no change (constant-fertility and

[11] For a general description of the procedures used in revising estimates of population dynamics, see: Chapter VI. Methodology of the United Nations population estimates and projections (pp. 100–104) in *World Population Prospects: The 2004 Revision, Volume III: Analytical Report.*

constant-mortality); and zero-migration. The *World Population Prospects Highlights* focuses on the medium variant of the 2008 revision, and results from the first four variants are available on line and are published in Volume I of *World Population Prospects*. The full set of results for all variants and scenarios is available only on CD-ROM.

The first five variants—namely, the low, medium, high, constant-fertility, and instant-replacement-fertility—differ among themselves exclusively in the assumptions made regarding the future path of fertility. The sixth variant, "constant-mortality," differs from the medium variant only with regard to the path followed by future mortality. The seventh variant, "no change," has constant mortality and constant fertility and thus differs from the medium variant with respect to both fertility and mortality. The eight variant, "zero-migration," differs from the medium variant only with regard to the path followed by future international migration. Generally, variants differ from each other only over the period 2010–2050.

To describe the different projection variants and scenarios, the various assumptions made regarding fertility, mortality, and international migration are presented below.

A. Medium-Fertility Assumption

Total fertility in all countries is assumed to converge eventually toward a level of 1.85 children per woman. However, not all countries reach this level during the projection period—that is, by 2045–2050. Projection procedures differ slightly, depending on whether a country had a total fertility above or below 1.85 children per woman in 2005–2010.

Fertility in high- and medium-fertility countries is assumed to follow a path derived from models of fertility decline established by the United Nations Population Division on the basis of the past experience of all countries with declining fertility during 1950–2010. The models relate the level of total fertility during a period to the average expected decline in total fertility during the next period. If the total fertility projected by a model for a country falls to 1.85 children per woman before 2050, total fertility is held constant at that level for the remainder of the projection period (that is, until 2050). Therefore, the level of 1.85 children per woman represents a floor value below which the total fertility of high- and medium-fertility countries is not allowed to drop before 2050. However, it is not necessary for all countries to reach the floor value by 2050. If the model of fertility change produces a total fertility above 1.85 children per woman for 2045–2050, that value is used in projecting the population.

In all cases, the projected fertility paths yielded by the models are checked against recent trends in fertility for each country. When a country's recent fertility trends deviate considerably from those consistent with the models, fertility is projected over an initial period of five or 10 years in such a way that it follows recent experience. The model projection takes over after that transition period. For instance, in countries where fertility has stalled or where there is no evidence of fertility decline, fertility is projected to remain constant for several more years before a declining path sets in.

Fertility in low-fertility countries is generally assumed to remain below 2.1 children per woman during most of the projection period and to reach 1.85 children per woman by 2045–2050. For countries where total fertility was below 1.85 children per woman in 2005–2010, it is assumed that over the first five or 10 years of the projection period, fertility will follow the recently observed trends in each country. After that transition period, fertility is assumed to increase linearly at a rate of 0.05 children per woman per five-year period. Thus, countries whose fertility is currently very low need not reach a level of 1.85 children per woman by 2050.

B. Mortality Assumptions: Increasing Life Expectancy Except When Affected by HIV and AIDS

Normal Mortality Assumption

Mortality is projected on the basis of models of change of life expectancy produced by the United Nations Population Division. These models produce smaller gains the higher the life expectancy already reached. The selection of a model for each country is based on recent trends in life expectancy by sex. For countries highly affected by the HIV epidemic, the model incorporating a slow pace of mortality decline has generally been used to project a certain slowdown in the reduction of general mortality risks not related to HIV and AIDS.

Impact of HIV and AIDS on Mortality

In the 2008 revision, countries where HIV prevalence among persons aged 15–49 was ever equal to or greater than 1% during 1980–2007 are considered to be affected by the HIV epidemic, and their mortality is projected by modeling explicitly the course of the epidemic and by projecting the yearly incidence of HIV infection. Also considered among the affected countries are those where HIV prevalence has always been lower than 1% but whose population is so large that the number of people living with HIV in 2007 surpasses 500,000 (i.e., Brazil, China, India, the Russian Federation, and the United States). In total, 58 countries are considered to be affected by the HIV epidemic in the 2008 Revision.

The model developed by the UNAIDS Reference Group on Estimates, Modeling and Projections (Ghys et al., 2008; Brown et al., 2008) is used to fit past estimates of HIV prevalence provided by UNAIDS for each of the affected countries (UNAIDS & WHO, 2008)[12] so as to derive the parameters determining the past dynamics of the epidemic for each of them. For most countries, the model is fitted assuming that the relevant parameters have remained constant in the past. Beginning in 2007, the parameter PHI, which reflects the rate of recruitment of new individuals into the high-risk or susceptible group, is projected to decline by half every 20 years. The parameter R, which represents the force of infection, is projected to decline by half every 30 years. The reduction in R reflects the assumption that changes in behavior among those subject to the risk of infection, along with increases in access to treatment for those infected, will reduce the chances of HIV transmission.

In the 2008 Revision, interventions to prevent mother-to-child transmission of HIV are modeled on the basis of estimated country-specific coverage levels that, in 2007, averaged 36% among the 58 affected countries, but varied from 0% to 99% among them (with 22 countries having less than 20% coverage of pregnant women in 2007, and only eight countries with more than 75% coverage). These coverage levels are projected to reach 60%, on average, by 2015, varying between 40% and 99% among the affected countries (UNAIDS, UNICEF, & WHO, 2008).[13] After 2015, the coverage of interventions to prevent mother-to-child transmission of HIV is assumed to remain constant until 2050 at the level reached in each of the affected countries in 2015. Among women receiving treatment, the probability of transmission from mother to child is assumed to vary between 2% and 19%, depending on the particular combination of breastfeeding practices (mixed breastfeeding, replacement feeding, exclusive breastfeeding), its duration in the population, and the type of treatment available (single-dose nevirapine, dual-prevention, or triple-prevention antiretroviral treatment). These

[12] See online table: "Adult (15-49) HIV prevalence percent by country, 1990-2007 (with 95% confidence intervals)," at http://data.unaids.org/pub/GlobalReport/2008/080813_gr08_prev1549_1990_2007_en.xls.

[13] See Table 1. Preventing mother-to-child transmission of HIV (pp. 33-35) and Table 2. Providing paediatric treatment (pp. 36-38); accessed at www.uniteforchildren.org/uniteforchildren/knowmore/files/StocktakingReport08_Full_110708.pdf.

assumptions produce a reduction in the incidence of HIV infection among children born to HIV-positive women, but the size of the reductions varies from country to country, depending on the level of coverage that treatment reaches in each country (Stover et al., 2008).

The survivorship of infected children (Brown et al., 2008) takes account of varying access to pediatric treatment (Marston et al., 2005; and Newell et al., 2004). In the 2008 Revision, HIV-infected children are divided into two groups: i) those infected in utero, among whom the disease progresses rapidly and whose average survival is set at 1.3 years, and ii) those infected through breastfeeding after birth, among whom the disease progresses slowly and whose average survival is set at 15.2 years without treatment (Marston et al., 2005; and Newell et al., 2004). Explicit inclusion of pediatric treatment is done via country-specific coverage levels, which averaged 34% in 2007 but varied between 0% and 99% among the 58 affected countries (with 15 countries having less than 10% coverage in 2007 and only 12 countries having a coverage level above 75%). By 2015, the projected coverage is expected to reach 60%, on average, in the 58 affected countries, varying from 40% to 100% (WHO, UNAIDS, and UNICEF, 2008). Coverage levels are assumed to remain constant from 2015 to 2050 at the level reached in each country by 2015. The annual survival of children receiving treatment is 80% during the first year, 90% in the second year, and 95% thereafter, so that their mean survival time is 31.1 years, and the median survival time is 20.5 years in the absence of other causes of death (Marston et al., 2005; and Newell et al., 2004).

The 2008 Revision incorporates a longer survival for persons receiving treatment with highly active antiretroviral therapy (ART) (Brown et al., 2008; Marston et al., 2005; and Newell et al., 2004). The proportion of the HIV-positive population receiving such treatment in each country is consistent with estimates prepared by the World Health Organization (WHO, UNAIDS, and UNICEF, 2008), which averaged 36% in 2007 among the 58 affected countries, but varied between 8% and 99%. Coverage is projected to reach between 40% and 100% by 2015, averaging 60% for the affected countries. Between 2015 and 2050, coverage levels are assumed to remain constant at the level reached in each country by 2015. It is assumed that adults receiving treatment have, on average, an 85% chance of surviving the first year of treatment, and a 95% chance of surviving each year thereafter in the absence of other causes of death. Under this assumption, mean survival time after the initiation of therapy is 19.3 years, and the median survival time is 10.9 years, in the absence of other causes of death. Therapy is assumed to start at the time full-blown AIDS develops. Without treatment, infected adults have a mean survival time of 3.2 years (and a median survival time of 3.0 years) after the onset of full-blown AIDS (Brown et al., 2008; Marston et al., 2005; and Newell et al., 2004).

C. International Migration Assumptions

Normal-migration assumption:

Under the normal migration assumption, the future path of international migration is set on the basis of past international migration estimates and of consideration of the policy stance of each country with regard to future international migration flows. Projected levels of net migration are generally kept constant over most of the projection period.

Zero-migration assumption:

Under this assumption, for each country, international migration is set to zero starting in 2010–2015.

D. Eight Projection Variants

The *2008 Revision* includes eight different projection variants (see table below). Five of those variants differ among themselves only with respect to the level of fertility in each, that is to say, they share the assumptions made with respect to mortality and international migration. The five fertility variants are: low, medium, high, constant-fertility and instant-replacement fertility. A comparison of their results allows an assessment of the effects that different fertility paths have on other demographic parameters.

Projection Variants in Terms of Assumptions for Fertility, Mortality, and International Migration

Projection variant	Assumptions		
	Fertility	Mortality	International migration
Low-fertility	Low	Normal	Normal
Medium-fertility	Medium	Normal	Normal
High-fertility	High	Normal	Normal
Constant-fertility	Constant as of 2005-2010	Normal	Normal
Instant replacement-fertility	Instant-replacement as of 2010-2015	Normal	Normal
Constant-mortality	Medium	Constant as of 2005-2010	Normal
No change	Constant as of 2005-2010	Constant as of 2005-2010	Normal
Zero-migration	Medium	Normal	Zero as of 2010-2015

In addition to the five fertility variants, a constant-mortality variant, a zero-migration variant and a constant variant have been prepared. The constant-mortality variant and the zero-migration variant both have the same fertility assumption (namely, medium fertility). Furthermore, the constant-mortality variant has the same international migration assumption as the medium variant. Consequently, the results of the constant-mortality variant can be compared with those of the medium variant in order to assess the effect that changing mortality has on other demographic parameters. Similarly, the zero-migration variant differs from the medium variant only with respect to the underlying assumption regarding international migration. Therefore, the zero-migration variant allows an assessment of the effect that non-zero net migration has on other demographic parameters. Lastly, the constant variant has the same international migration as the medium variant but differs from the latter in having constant fertility and mortality. Consequently, the results of the constant variant when compared with those of the medium variant shed light on the effects that changing fertility and mortality have on the results obtained.

E. Methodological Changes Introduced in the *2008 Revision*

The following changes and adjustments were made in the *2008 Revision* in relation to procedures followed in the *2006 Revision*.

- The base year, that is to say, the year in which the projections start changed from 2005 to 2010.

- In the *2008 Revision*, the impact of HIV/AIDS on mortality is modeled explicitly for all countries where HIV prevalence among persons aged 15–49 was ever equal to or greater than 1 per cent during 1980–2007.
- The models of the incidence of HIV infection by age have been revised to take into account newly available data from nationally representative population surveys. Three new regional models, one each for Africa, Asia and the Caribbean, have been the basis for estimations by the Population Division for each sex using adult HIV prevalence rates by age and sex from 24 Demographic and Health Surveys (DHS) (covering 21 countries between 2001 and 2007).[14] In the new models, mean age at infection is lower than in the models used in previous revisions, particularly for males. The mean age of infection for females varies between 25.0 years (Asia) and 26.9 years (Africa) while for males it varies between 27.9 years (Asia) and 31.9 years (Africa).

[14] The approach is based on methodology presented at the UNAIDS Reference Group on Estimates, Modelling and Projections January 2008 meeting (London) by Ray W. Shiraishi and others, on "Using Population-based HIV surveys to estimate HIV incidence in Kenya, Malawi and Uganda."

APPENDIX B: Commodity and Supply Costs

The table below was adapted from UNFPA's *Achieving the ICPD goals* (UNFPA, 2009) to reflect estimated averages for Norplant®, Jadelle®, Implanon®, Sino-implant (II), the two-month injectable, and SDM (also known as CycleBeads).

Method	Units Required for One CYP	Price per Unit (U.S dollars)	Cost per CYP[c]
Female sterilization	1/9[a]	$9.09[b]	$1.01
Male sterilization	1/9[a]	$4.95[b]	$0.55
IUD	1/3.5	$0.37[b]	$0.11
Jadelle®	1/3.5	$22.00[f]	$6.29
Implanon®[d]	1/2.1	$24.00[f]	$11.43
Sino-implant (II)	1/3.5	$8.00[f]	$2.29
Pill	15	$0.21[b]	$3.15
Injectable—three-month	4	$0.87[b]	$3.48
Injectable—two-month	6	$0.86	$5.16
Male condom	120	$0.025[b]	$3.00
Female condom	120	$0.77[b]	$92.40
SDM/CycleBeads[e]	1/2	$1.16[g]	$0.58

a Though sterilization's effect is permanent, it is assumed to provide only nine years of protection, because many are not sterilized until late in their reproductive years.

b Prices are weighted averages of those normally paid by UNFPA and USAID, with weights reflecting the respective shares of commodities they supply.

c Calculated from preceding columns.

d Implanon® is not purchased by USAID. The cost cited here is based on a tiered pricing system where the cost of purchasing 30,000–50,000 units is $20.74. This tier is cited based on an example of what the cost would be if a country with a population size of Uganda had a 1% CPR for implants; then, approximately 43,000 units would be needed. The other tiers range in price from approximately $18.18 to $23.37 per unit.

e Price is inclusive of Cycle Beads, with instructions and calendar (USAID, 2007).

f Price is an average of estimated cost range from Reproductive Health Supplies Coalition database (RHSC, 2009).

g From The Deliver Project's Family Planning Product Catalog, 2010. Available at: http://deliver.jsi.com/dhome/mycommodities/productcatalog /fpproducts. Accessed July 7, 2010.

APPENDIX C:
Excel Functions: Tips on Using Excel

The following tips on using Excel are taken, with permission, from the help files of Microsoft Office Online. When applicable, differences between Excel 2003 and Excel 2007 and 2010 are noted. For Excel 2007 or 2010 users, the "Microsoft Office Button" is the round button in the top left corner; it looks like this: 

Save a File

Excel 2003: On the **File** menu, click **Save**.
Excel 2007 or 2010: Click the **Microsoft Office Button**, and then click **Save**.

Note: If you are saving the file for the first time, you will be asked to give it a name.

Save a copy of a file

Excel 2003

1. On the **File** menu, click **Save As**.
2. In the **File name** box, enter a new name for the file.
3. Click **Save**.

Excel 2007 or 2010

1. Click the **Microsoft Office Button**, and then click **Save As**.
2. In the **File name** box, enter a new name for the file.
3. Click **Save**.

> **Tip:**
> To save the copy into a different folder, click a different drive in the **Save As** drop-down list or a different folder in the folder list, or both. To save the copy into a new folder, click **Create New Folder**.

Save a file to another format

Excel 2003

1. On the **File** menu, click **Save As**.
2. In the **File name** box, enter a new name for the file.
3. Click the **Save As Type** drop-down list, and then click the file format that you want the file to be saved in.
4. Click **Save**.

Excel 2007 or 2010

1. Click the **Microsoft Office Button**, and then click **Save As**.
2. In the **File name** box, enter a new name for the file.
3. In the **Save as type** list, click the file format that you want to save the file in. For example, click Rich Text Format (.rtf), Web Page (.htm or .html), or Comma Delimited (.csv).
4. Click **Save**.

Save files automatically while working

Excel 2003

1. On the **Tools** menu, click **Options**, and then click the **Save** tab.
2. Select the **Save AutoRecover info every** check box.
3. In the **minutes** box, enter the interval for how often you want to save files. The more frequently your files are saved, the more information is recovered if there is a power failure or similar problem while a file is open.

Excel 2007 or 2010

1. Click the **Microsoft Office Button**, then click **Excel Options**.
2. Click **Save**.
3. Select the **Save AutoRecover information every** check box.
4. In the **minutes** box, type or select a number to determine how often you want to save files.

Note: AutoRecover is not a replacement for regularly saving your files. If you choose not to save the recovery file after opening it, the file is deleted and your unsaved changes are lost. If you save the recovery file, it replaces the original file (unless you specify a new file name).

Copy a File

When you copy a file or folder, you are making a duplicate of the original item that you can then modify, delete, or store independently of the original.

1. Open the location that contains the file or folder you want to copy.
2. Right-click the file or folder you want to copy, and then click **Copy**.
3. Open the location where you want to store the copy.
4. Right-click within the location, and then click **Paste**.

The copy of the original file or folder appears in the new location.

Note: You can also select more than one file to copy at a time.

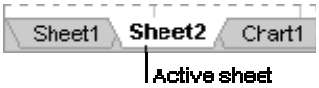
> **Tip:**
> If you select a file that you do not want, hold down CTRL and click the file again.

Move or Copy Sheets

Caution: Be careful when you move or copy sheets. Calculations or charts based on worksheet data might become inaccurate if you move the worksheet. Similarly, if you insert a worksheet between sheets that are referred to by a 3-D formula reference (i.e., a reference to a range that spans two or more worksheets in a workbook), data on that worksheet might be included in the calculation.

1. To move or copy sheets to another workbook, open the workbook that will receive the sheets.
2. Switch to the workbook that contains the sheets you want to move or copy, and then select the sheets.

> **How?**
> When you enter or change data, the changes affect all selected sheets. These changes may replace data on the active sheet and other selected sheets.

To select	Do this
A single sheet	Click the sheet tab.  If you do not see the tab you want, click the tab scrolling buttons to display the tab, and then click the tab. 
Two or more adjacent sheets	Click the tab for the first sheet, and then hold down SHIFT and click the tab for the last sheet.
Two or more nonadjacent sheets	Click the tab for the first sheet, and then hold down CTRL and click the tabs for the other sheets.
All sheets in a workbook	Right-click a sheet tab, and then click **Select All Sheets** on the shortcut menu (i.e., a menu that shows a list of commands relevant to a particular item; to display a shortcut menu, right-click an item or press SHIFT+F10).

Note: If sheet tabs have been color-coded, the sheet tab name will be underlined in a user-specified color when selected. If the sheet tab is displayed with a background color, the sheet has not been selected.

Cancel a selection of multiple sheets:
To cancel a selection of multiple sheets in a workbook, click any unselected sheet.

If no unselected sheet is visible, right-click the tab of a selected sheet. Then click **Ungroup Sheets** on the shortcut menu.

3. On the **Edit** menu, click **Move or Copy Sheet**.
4. In the **To book** box, click the workbook to receive the sheets.

To move or copy the selected sheets to a new workbook, click **new book**.

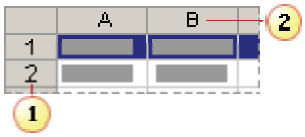
5. In the **Before sheet** box, click the sheet before which you want to insert the moved or copied sheets.
6. To copy the sheets instead of moving them, select the **Create a copy** check box.

Tip:
To move sheets within the current workbook, you can drag the selected sheets along the row of sheet tabs. To copy the sheets, hold down CTRL, and then drag the sheets; release the mouse button before you release the CTRL key.

Hide or Display Rows and Columns

Hide a row or column

1. Select the rows or columns you want to hide.

To select	Do this
Text in a cell	If editing in a cell is turned on, select the cell, double-click in it, and then select the text in the cell. If editing in a cell is turned off, select the cell, and then select the text in the formula bar. 
A single cell	Click the cell, or press the arrow keys to move to the cell.
A range of cells (i.e., two or more cells on a sheet. The cells in a range can be adjacent or nonadjacent.)	Click the first cell of the range, and then drag to the last cell.
A large range of cells	Click the first cell in the range, and then hold down SHIFT and click the last cell in the range. You can scroll to make the last cell visible.
All cells on a worksheet	Click the **Select All** button. 
Nonadjacent cells or cell ranges	Select the first cell or range of cells, and then hold down CTRL and select the other cells or ranges.
An entire row or column	Click the row or column heading. 
Adjacent rows or columns	Drag across the row or column headings. Or, select the first row or column, then hold down SHIFT and select the last row or column.
Nonadjacent rows or columns	Select the first row or column, and then hold down CTRL and select the other rows or columns.
More or fewer cells than the active selection	Hold down SHIFT and click the last cell that you want to include in the new selection. The rectangular range between the active cell (i.e., the selected cell in which data is entered when you begin typing. Only one cell is active at a time. The active cell is bounded by a heavy border.) and the cell you click becomes the new selection.
Cancel a selection of cells	Click any cell on the worksheet.

2. **Excel 2003:** On the **Format** menu, point to **Row** or **Column**, and then click **Hide**.

3. **Excel 2007 or 2010:** On the **Home** tab, in the **Cells** group, click **Format**.

   Do one of the following:
   1. Under **Visibility**, point to **Hide & Unhide**, and then click **Unhide Rows** or **Unhide Columns**.
   2. Under **Cell Size**, click **Row Height** or **Column Width**, and then type the value that you want in the **Row Height** or **Column Width** box.

Display a hidden row or column:
1. Do one of the following:
   - To display hidden rows, select the row above and below the rows you want to display.
   - To display hidden columns, select the column adjacent to either side of the columns you want to display.
2. **Excel 2003:** On the **Format** menu, point to **Row** or **Column**, and then click **Unhide**.
   Excel 2007 or 2010: On the **Home** tab, in the **Cells** group, click **Format**. On the **Home** tab, in the **Cells** group, click **Format**.

Notes
Excel 2003
If the first row or column of a worksheet is hidden, click **Go To** on the **Edit** menu. In the **Reference** box, type **A1**, and then click **OK**. On the **Format** menu, point to **Row** or **Column**, and then click **Unhide**.

Instead of being hidden, the height or width of the first row or column of a worksheet may have been set to zero. In this case, point to the border of the **Select All** button until the cursor changes to ↕ or ↔, and then drag to widen the row or column.

Excel 2007 or 2010
1. To select the first hidden row or column on the worksheet, do one of the following:
   - In the **Name Box** next to the formula bar, type **A1**.
   - On the **Home** tab, in the **Editing** group, click **Find & Select**, and then click **Go To**.
   - In the **Reference** box, type **A1**, and then click **OK**.
2. On the **Home** tab, in the **Cells** group, click **Format**.
3. Do one of the following:
   - Under **Visibility**, point to **Hide & Unhide**, and then click **Unhide Rows** or **Unhide Columns**.
   - Under **Cell Size**, click **Row Height** or **Column Width**, and then type the value that you want in the **Row Height** or **Column Width** box.

Move or Copy Cells and Cell Contents

Using the **Cut**, **Copy**, and **Paste** commands in Microsoft Excel, you can move or copy entire cells or their contents. You can also copy specific contents or attributes from the cells. For example, you can

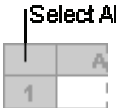
copy the resulting value of a formula without copying the formula itself, or you can copy only the formula.

Note: Excel displays an animated moving border around cells that have been cut or copied. To cancel a moving border, press ESC.

Move or copy entire cells

When you move or copy a cell, Excel moves or copies the entire cell, including formulas and their resulting values, comments, and cell formats.

1. **In Excel 2003, 2007, or 2010:** Select the cells that you want to move or copy.

To select	Do this
A single cell	Click the cell, or press the arrow keys to move to the cell.
A range of cells (i.e., two or more cells on a sheet. The cells in a range can be adjacent or nonadjacent.)	Click the first cell of the range, and then drag to the last cell.
A large range of cells	Click the first cell in the range, and then hold down SHIFT while you click the last cell in the range. You can scroll to make the last cell visible.
All cells on a worksheet	Click the **Select All** button. 
Nonadjacent cells or cell ranges	Select the first cell or range of cells, and then hold down CTRL while you select the other cells or ranges.
More or fewer cells than the active selection	Hold down SHIFT while you click the last cell that you want to include in the new selection. The rectangular range between the active cell (i.e., the selected cell in which data are entered when you begin typing. Only one cell is active at a time. The active cell is bounded by a heavy border.) and the cell that you click becomes the new selection.

Note: To cancel a selection of cells, click any cell on the worksheet.

Excel 2003

2. Do one of the following:
   - To move cells, click **Cut**  on the **Standard** toolbar (a bar with buttons and options that you use to carry out commands. To display a toolbar, press ALT and then SHIFT+F10.), or press CTRL+X.
   - To copy cells, click **Copy**  .on the **Standard** toolbar, or press CTRL+C.
3. Select the upper-left cell of the paste area (the target destination for data that have been cut or copied by using the Office Clipboard).
4. Click **Paste**  on the **Standard** toolbar, or press CTRL+V.

Excel 2007 or 2010

1. Select the cells that you want to move or copy.
2. On the **Home** tab, in the **Clipboard** group, do one of the following:
   - To move cells, click **Cut** .
     Keyboard shortcut: You can also press CTRL+X.
   - To copy cells, click **Copy** .
     Keyboard shortcut: You can also press CTRL+C.
3. Select the upper-left cell of the paste area.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**  .

> **Tip:**
> To move or copy a selection to a different worksheet or workbook, click another worksheet tab or switch to another workbook, and then select the upper-left cell of the paste area.

Notes:

- To choose specific options when you paste cells, you can click the arrow next to **Paste** on the **Standard** toolbar (**Excel 2003)** or on the **Clipboard** group (**Excel 2007 or 2010)**, and then click the option that you want.
- By default, Excel displays the **Paste Options** button on the worksheet to provide you with special options when you paste cells, such as **Keep Source Formatting** and **Match Destination Formatting**. If you do not want to display this button every time you paste cells, you can turn this option off. **In Excel 2003:** On the **Tools** menu, click **Options**; on the **Edit** tab, clear the **Show Paste Options buttons** check box. **In Excel 2007 or 2010:** Click the **Microsoft Office Button**, and then click **Excel Options**; in the **Advanced** category, under **Cut, Copy, and Paste**, clear the **Show Paste Options buttons** check box.
- Excel replaces existing data in the paste area when you move cells.
- When you copy cells, cell references are automatically adjusted. When you move cells, however, cell references are not adjusted, and the contents of those cells and of any cells that point to them may be displayed as reference errors. In this case, you will need to adjust the references manually.
- If the selected copy area (i.e., the cells that you copy when you want to paste data into another location; after you copy cells, a moving border appears around them to indicate that they have been copied.) includes hidden cells, Excel also copies the hidden cells. You may need to temporarily unhide cells that you do not want to include when you copy information.

If the paste area contains hidden rows or columns, you might need to unhide the paste area to see all of the copied cells.

Move or copy entire cells by using the mouse

By default, drag-and-drop editing is turned on so that you can use the mouse to move and copy cells.

1. Select the cells or range of cells that you want to move or copy.
   - How to select cells

To select	Do this
A single cell	Click the cell, or press the arrow keys to move to the cell.
A range of cells	Click the first cell of the range, and then drag to the last cell.
A large range of cells	Click the first cell in the range, and then hold down SHIFT while you click the last cell in the range. You can scroll to make the last cell visible.
All cells on a worksheet	Click the **Select All** button. 
Nonadjacent cells or cell ranges	Select the first cell or range of cells, and then hold down CTRL while you select the other cells or ranges.
More or fewer cells than the active selection	Hold down SHIFT while you click the last cell that you want to include in the new selection. The rectangular range between the active cell (i.e., the selected cell in which data are entered when you begin typing; only one cell is active at a time) and the cell that you click becomes the new selection.

2. Do one of the following:
   - To move a cell or range of cells, point to the border of the selection. When the pointer becomes a move pointer  , drag the cell or range of cells to another location.
   - To copy a cell or range of cells, hold down CTRL while you point to the border of the selection. When the pointer becomes a copy pointer  , drag the cell or range of cells to another location.

Notes

- Excel replaces existing data in the paste area when you move cells.
- When you copy cells, cell references are automatically adjusted. When you move cells, however, cell references are not adjusted, and the contents of those cells and of any cells that point to them may be displayed as reference errors. In this case, you will need to adjust the references manually.
- If the selected copy area includes hidden cells, Excel also copies the hidden cells. You may need to temporarily unhide cells that you do not want to include when you copy information.

If the paste area contains hidden rows or columns, you might need to unhide the paste area to see all of the copied cells.

Insert moved or copied cells between existing cells

1. Select the cell or range.
   In **Excel 2003:**
   1. Do one of the following:
      - To move the selection, click **Cut** on the **Standard** toolbar, or press CTRL+X.
      - To copy the selection, click **Copy** on the **Standard** toolbar, or press CTRL+C.
   2. Select the upper-left cell of the paste area.
   3. On the **Insert** menu, click **Cut Cells** or **Copied Cells**.

4. In the **Insert Paste** dialog box, click the direction in which you want to shift the surrounding cells.

In Excel 2007 or 2010:

1. Select the cell or range of cells that contains the data that you want to move or copy.
2. On the **Home** tab, in the **Clipboard** group, do one of the following:
   - To move the selection, click **Cut**.
   - To copy the selection, click **Copy**.
3. Right-click the upper-left cell of the paste area, and then click **Insert Cut Cells** or **Insert Copied Cells** from the shortcut menu.

Note: If you insert entire rows or columns, the surrounding rows and columns are shifted down and to the left.

> **Tip**
> To move or copy a selection to a different worksheet or workbook, click another worksheet tab or switch to another workbook, and then select the upper-left cell of the paste area.

Copy visible cells only

If some cells, rows, or columns on your worksheet are not displayed, you have the option of copying all cells or only the visible cells. For example, you can choose to copy only the displayed summary data on an outline.

In Excel 2003:

1. Select the cells that you want to copy.
2. On the **Edit** menu, click **Go To**.
3. In the **Go To** dialog box, click **Special**.
4. In the **Go To Special** dialog box, click **Visible cells only**, and then click **OK**.
5. Click **Copy** on the **Standard** toolbar, or press CTRL+C.
6. Select the upper-left cell of the paste area.
7. Click **Paste** on the **Standard** toolbar, or press CTRL+V.

In Excel 2007 or 2010:

1. Select the cells that you want to copy.
2. On the **Home** tab, in the **Editing** group, click **Find & Select**, and then click **Go To**.
3. In the **Go To** dialog box, click **Special**.
4. Under **Select**, click **Visible cells only**, and then click **OK**.
5. On the **Home** tab, in the **Clipboard** group, click **Copy**.
6. Select the upper-left cell of the paste area.

> **Tip**
> To move or copy a selection to a different worksheet or workbook, click another worksheet tab or switch to another workbook, and then select the upper-left cell of the paste area.

7. On the **Home** tab, in the **Clipboard** group, click **Paste.**

Notes

- Excel pastes the copied data into consecutive rows or columns. If the paste area contains hidden rows or columns, you might need to unhide the paste area to see all of the copied cells.

- If you click the arrow next to **Paste** on the **Standard** toolbar, you can choose from several paste options to apply to your selection.
- When you copy or paste hidden or filtered (i.e., displaying only the rows in a list that satisfy the conditions you have specified) data to another application or another instance of Excel, only visible cells are copied.

Prevent copied blank cells from replacing data

Excel 2003:

1. Select the range of cells that contains blank cells.
2. Click **Copy** on the **Standard** toolbar, or press CTRL+C.
3. Select the upper-left cell of the paste area.
4. Click the arrow to the right of **Paste** on the **Standard** toolbar, and then click **Paste Special**.
5. Select the **Skip blanks** check box.

Excel 2007 or 2010:

1. Select the range of cells that contains blank cells.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. Select the upper-left cell of the paste area.
4. On the **Home** tab, in the **Clipboard** group, click the arrow below **Paste**, and then click **Paste Special**.
5. Select the **Skip blanks** check box.

Move or copy the contents of a cell

1. Double-click the cell that contains the data you want to move or copy.

Note: By default, you can edit and select cell data directly in the cell by double-clicking it, but you can also edit and select cell data in the formula bar (the bar at the top of the Excel window in which you enter or edit values or formulas in cells or charts).

2. In the cell, select the characters that you want to move or copy.

In Excel 2003:

1. Do one of the following:
   - To move the selection, click **Cut** on the **Standard** toolbar, or press CTRL+X.
   - To copy the selection, click **Copy** on the **Standard** toolbar, or press CTRL+C.
2. In the cell, click where you want to paste the characters, or double-click another cell to move or copy the data.
3. Click **Paste** on the **Standard** toolbar, or press CTRL+V.
4. Press ENTER.

In Excel 2007 or 2010:

1. On the **Home** tab, in the **Clipboard** group, do one of the following:
   - To move the selection, click **Cut**.
   - To copy the selection, click **Copy**.
2. In the cell, click where you want to paste the characters, or double-click another cell to move or copy the data.
3. On the **Home** tab, in the **Clipboard** group, click **Paste**.
4. Press ENTER.

Note: When you double-click a cell or press F2 to edit the active cell, the arrow keys work only within that cell. To use the arrow keys to move to another cell, first press ENTER to complete your editing changes to the active cell.

Copy cell values, cell formats, or formulas only

When you paste copied data, you can do any of the following:

- Convert any formulas in the cell to the calculated values without overwriting the existing formatting
- Paste only the cell formatting, such as font color or fill color (and not the contents of the cells)
- Paste only the formulas (and not the calculated values)

In Excel 2003:

1. Select the cell or range of cells that contains the values, cell formats, or formulas that you want to copy.
2. Click **Copy** on the **Standard** toolbar.
3. Select the upper-left cell of the paste area or the cell where you want to paste the value, cell format, or formula.
4. Click the arrow to the right of **Paste** on the **Standard** toolbar, and then do one of the following:
   - To paste values only, click **Values**.
   - To paste cell formats only, click **Paste Special**, and then, in the **Paste Special** dialog box, click **Formats**.
   - To paste formulas only, click **Formulas**.

In Excel 2007 or 2010:

1. Select the cell or range of cells that contains the values, cell formats, or formulas that you want to copy.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. Select the upper-left cell of the paste area or the cell where you want to paste the value, cell format, or formula.
4. On the **Home** tab, in the **Clipboard** group, click the arrow below **Paste**, and then do one of the following:
   - To paste values only, click **Paste Values**.
   - To paste cell formats only, click **Paste Special**, and then click **Formats** under **Paste**.
   - To paste formulas only, click **Formulas**.

Note: If the copied formulas contain relative cell references, Excel adjusts the references (and the relative parts of mixed cell references) in the duplicate formulas. For example, suppose that cell B8 contains the formula =SUM(B1:B7). If you copy the formula to cell C8, the duplicate formula refers to the corresponding cells in that column: =SUM(C1:C7). If the copied formulas contain an absolute cell reference (i.e., the exact address of a cell, regardless of the position of the cell that contains the formula), the references in the duplicate formulas are not changed. If you do not get the results that you want, you can also change the references in the original formulas to either relative or absolute cell references and then recopy the cells.

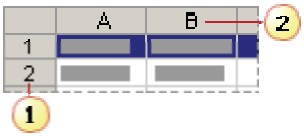
Edit data on multiple worksheets

When you select several worksheets and then change the data on one of them, the changes are applied to the same cells on all of the selected worksheets.

1. Click the tab of the first worksheet that contains the data that you want to edit, then hold down CTRL while you click the tabs of other worksheets that contain the same data.

Note: If you do not see the tab that you want, click the tab scrolling buttons to display the tab, and then click the tab.

2. On the active worksheet (i.e., the sheet that you are working on in a workbook), select the cell or range of cells that contains the data that you want to edit.
   - How to select cells

To select	Do this
A single cell	Click the cell, or press the arrow keys to move to the cell.
A range of cells	Click the first cell of the range, and then drag to the last cell.
A large range of cells	Click the first cell in the range, and then hold down SHIFT while you click the last cell in the range. You can scroll to make the last cell visible.
All cells on a worksheet	Click the **Select All** button. 
Nonadjacent cells or cell ranges	Select the first cell or range of cells, and then hold down CTRL while you select the other cells or ranges.
An entire row or column	Click the row or column heading.  1 Row heading 2 Column heading
Adjacent rows or columns	Drag across the row or column headings. Or select the first row or column; then hold down SHIFT while you select the last row or column.
Nonadjacent rows or columns	Select the first row or column, and then hold down CTRL while you select the other rows or columns.
More or fewer cells than the active selection	Hold down SHIFT while you click the last cell that you want to include in the new selection. The rectangular range between the active cell and the cell that you click becomes the new selection.

Note: To cancel a selection of cells, click any cell on the worksheet.

3. Edit the data in the selected cell, and then press ENTER or TAB to move the selection to the next cell.
4. Repeat the previous step until all changes have been made.

Notes

- When you edit data, the changes affect all selected worksheets and may inadvertently replace data that you did not mean to change. If needed, you can view worksheets at the same time:

Excel 2003

1. On the **Window** menu, click **New Window**.
2. Switch to the new window, and then click a worksheet that you want to view. Repeat for each worksheet that you want to view.
3. On the **Window** menu, click **Arrange**, and then click the option that you want.
4. To view worksheets in only the active workbook, select the **Windows of active workbook** check box.
    - To cancel a selection of multiple worksheets, click any unselected worksheet. If an unselected worksheet is not visible, right-click the tab of a selected worksheet, and then click **Ungroup Sheets**.

Excel 2007 or 2010

View two worksheets in the same workbook side by side

1. On the **View** tab, in the **Window** group, click **New Window**.
2. On the **View** tab, in the **Window** group, click **View Side by Side**.
3. In the workbook window, click the worksheets that you want to compare.
4. To scroll both worksheets at the same time, click **Synchronous Scrolling** in the **Window** group on the **View** tab.

View two worksheets of different workbooks side by side

1. Open both of the workbooks that contain the worksheets that you want to compare.
2. On the **View** tab, in the **Window** group, click **View Side by Side**.
3. In each workbook window, click the sheet that you want to compare.
4. To scroll both worksheets at the same time, click **Synchronous Scrolling** in the **Window** group on the **View** tab.

If you resize the workbook windows for optimal viewing, you can click **Reset Window Position** to return to the original settings.

To restore a workbook window to full size, click **Maximize** at the upper-right corner of the workbook window.

View multiple worksheets at the same time

1. Open the workbook or workbooks that contain the worksheets that you want to view at the same time.
2. Do one of the following:

If the worksheets that you want to view are in the same workbook:

1. Click a worksheet that you want to view.
2. On the **View** tab, in the **Window** group, click **New Window**.
3. Repeat steps 1 and 2 for each sheet that you want to view.

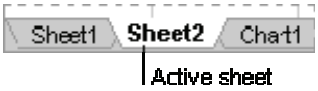
If the worksheets that you want to view are in different workbooks, continue with Step 3.

1. On the **View** tab, in the **Window** group, click **Arrange All**.
2. Under **Arrange**, click the option that you want.
3. To view sheets only in the active workbook, select the **Windows of active workbook** check box.

Rename a worksheet

The name (or title) of a worksheet appears on its sheet tab on the **Sheet tab** bar at the bottom of the screen. By default, the names are Sheet1, Sheet2, and so on, but you can give your worksheet a more appropriate name.

1. To rename the active sheet, do one of the following:
   - On the **Format** menu, point to **Sheet** and then click **Rename**.
   - On the **Sheet tab** bar, right-click the tab you want to rename, and then click **Rename**.



2. Type the new name over the current name.

Copy Excel data and charts to Word or PowerPoint

Excel 2003

1. Select the data or chart that you want to copy.
2. Click **Copy**.
3. Switch to Microsoft Word or Microsoft PowerPoint.
4. Click in the document or presentation where you want to put the Microsoft Excel data or chart, and do one of the following:
   - **Paste the data into Word**
     1. Click **Paste** on the **Formatting** toolbar.
     2. Click **Paste Options** next to the data, and then do one of the following:
        - To paste the data as a Word table, click **Match Destination Table Style** or **Keep Source Formatting**.
        - To paste a link to the Excel data, so that the data in the Word document are updated whenever you change the data in the original Excel workbook, click **Match Destination Table Style and Link to Excel** or **Keep Source Formatting and Link to Excel**.
        - To paste the data as text with each row in a separate paragraph and tabs separating the cell values, click **Keep Text Only**.

   - **Paste a chart into Word**
     1. Click **Paste** on the **Formatting** toolbar.
     2. Click **Paste Options** next to the chart, and then do one of the following:
        - To paste the chart as a chart, so that when you double-click the chart in the Word document you can use Excel to edit it, click **Excel Chart**.
        - To paste a link to the Excel chart, so that the chart in the Word document is updated whenever you change the chart in the original Excel workbook, click **Link to Excel Chart**.
        - To paste a bitmap picture of the chart, click **Picture of Chart**.

   - **Paste the data into PowerPoint**
     1. On the **Edit** menu, click **Paste Special**, and then do one of the following:
        - To paste the data as an Excel range, so that when you double-click the range in the presentation you can edit it with Excel, click **Microsoft Excel Worksheet Object**. If

- To paste a link to the Excel data, so that the data in the presentation are updated whenever you change the data in the original Excel workbook, click **Paste link**, and then click **Microsoft Excel Worksheet Object**.
- To paste the data as text that you can edit in PowerPoint, click **Formatted Text (RTF)** or **Unformatted Text**.
- To paste a bitmap picture of the data, click **Picture** or **Bitmap**.

- **Paste a chart into PowerPoint**
  1. On the Edit menu, click **Paste Special**, and then do one of the following:
     - To paste the chart as a chart, so that when you double-click the chart in the presentation you can use Excel to edit it, click **Microsoft Excel Chart Object**.
     - To paste a link to the Excel chart, so that the chart in the presentation is updated whenever you change the chart in the original Excel workbook, click **Paste link**, and then click **Microsoft Excel Chart Object**.
     - To paste a bitmap picture of the chart, click **Picture**.

Excel 2007 or 2010:

Copy worksheet data to a Word document

1. In Excel, select the worksheet data that you want to copy to a Word document.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. In the Word document, click where you want to paste the copied worksheet data.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**.
5. Click **Paste Options** next to the data, and then do one of the following:
   - To paste the data as a Word table, click **Keep Source Formatting** if you want to use the original format of the copied data, or click **Match Destination Table Style** if you want to use the document theme that is applied to the Word document.
   - To paste the data as a static picture, click **Paste as Picture**.
   - To paste a link to the Excel data so that the data in the Word document are updated when you change the original data in the Excel workbook, click **Keep Source Formatting and Link to Excel** or click **Match Destination Table Style and Link to Excel**.
   - To paste the data as text, with each row in a separate paragraph and with tab spaces separating the cell values, click **Keep Text Only**.
   - If you do not see the **Paste Options** button, you may have to turn it on. Click the **Microsoft Office Button**, and then click **Word Options**. In the **Advanced** category, under **Cut, Copy, and Paste**, select the **Show Paste Options buttons** check box.
   - If you paste the data into a Word table, the **Paste Options** button displays different paste options. You can insert the copied data as a nested table, merge it with the existing table, insert it as new rows in the existing table, overwrite the cells in the existing table, or paste it as a static picture.

Copy a chart to a Word document

1. In Excel, select the embedded chart or chart sheet that you want to copy to a Word document.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. In the Word document, click where you want to paste the copied chart.

4. On the **Home** tab, in the **Clipboard** group, click **Paste**.
5. Click **Paste Options** next to the chart, and then do one of the following:
   - To paste the chart with a link to its source data, click **Chart (linked to Excel data)**.
   - To paste the chart and to include access to the entire workbook in the document, click **Excel Chart (entire workbook)**.
   - To paste the chart as a static picture, click **Paste as Picture**.
   - To paste the chart in its original format, click **Keep Source Formatting**.
   - To paste the chart and format it by using the document theme that is applied to the document, click **Use Destination Theme**.

Copy worksheet data to a PowerPoint presentation

1. In Excel, select the worksheet data that you want to copy to a PowerPoint presentation.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. Click in the PowerPoint presentation where you want to paste the copied worksheet data.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**.
5. Click **Paste Options** next to the data, and then do one of the following:
   - To use the original format of the copied data, click **Keep Source Formatting**.
   - To use the document theme that is applied to the PowerPoint presentation, click **Use Destination Theme**.
   - To paste table data that you copied as text, click **Keep Text Only**.
   - If you do not see the **Paste Options** button, you may have to turn it on. Click the **Microsoft Office Button**, and then click **PowerPoint Options**. In the **Advanced** category, under **Cut, Copy, and Paste**, select the **Show Paste Options buttons** check box.
   - If you paste the data into a PowerPoint table, the **Paste Options** button is not displayed.

Copy a chart to a PowerPoint presentation

1. In Excel, select the embedded chart or chart sheet that you want to copy to a PowerPoint presentation.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
3. Click in the PowerPoint presentation where you want to paste the copied chart.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**.
5. Click **Paste Options** next to the chart, and then do one of the following:
   - To paste the chart with a link to its source data, click **Chart (linked to Excel data)**.
   - To paste the chart and include access to the entire workbook in the presentation, click **Excel Chart (entire workbook)**.
   - To paste the chart as a static picture, click **Paste as Picture**.
   - To paste the chart in its original format, click **Keep Source Formatting**.
   - To paste the chart and format it by using the document theme that is applied to the presentation, click **Use Destination Theme**.

Tip:
If you want a range of Excel data that you have pasted into Word or PowerPoint to expand when the data expand in Excel, name the range in Excel before you copy it, and then paste a link to the named range. (*Note:* When naming a range, use an easy-to-understand name, such as "Products," to refer to hard-to-understand ranges, such as "Sales!C20:C30.")

Remove the split from a window or unfreeze a pane

1. To restore a window that has been split into two scrollable areas, double-click any part of the split bar that divides the panes.
2. To remove nonscrolling "frozen" panes, click **Window**, and then click **Unfreeze Panes**.

Change the scale of a value axis

By default, Microsoft Excel determines the minimum and maximum scale values of the value (y) axis in a chart. You can, however, customize the scale to better meet your needs.

1. In a chart sheet (i.e., a sheet in a workbook that contains only a chart) or an embedded chart (i.e., a chart that is placed on a worksheet rather than on a separate chart sheet), click the value (y) axis that you want to change.

   - How to select an axis
     Excel 2003:
     1. Click the chart sheet or the embedded chart.
     2. On the **Chart** toolbar, click the arrow next to the **Chart Objects** box, and then click **Category Axis** or **Value Axis**.

> **Tip**
> If you do not see the **Chart** toolbar, point to **Toolbars** on the **View** menu, and then select **Chart**. The **Chart Objects** box is available unless the toolbar has been anchored at the left or right side of the screen.

2. On the **Format** menu, click **Selected Axis**.

   Note: The **Selected Axis** command is only available when a chart axis is selected.

3. On the **Scale** tab, do one or more of the following:
   Important: The following scaling options are only available when a value (y) axis is selected. The **Scale** tab provides different options for a category (x) axis.
   - To change the number at which the value axis starts or ends, type a different number in the **Minimum** box or the **Maximum** box.
   - To change the interval of tick marks (i.e., small lines of measurement, similar to divisions on a ruler, that intersect an axis) and chart gridlines , type a different number into the **Major unit** box or **Minor unit** box.
   - To change the units displayed on the value axis, select the units that you want in the **Display units** list.

     If you want to show a label that describes the units, select the **Show display units label on chart** check box.

     Excel 2007 or 2010:

     To change the values on a vertical axis:
     1. In a chart, click the vertical (value) axis that you want to change, or do the following to select the axis from a list of chart elements:
        - Click anywhere in the chart. (This displays the **Chart Tools**, adding the **Design**, **Layout**, and **Format** tabs.)

- On the **Format** tab, in the **Current Selection** group, click the arrow next to the **Chart Elements** box, and then click **Vertical (Value) Axis**.

2. On the **Format** tab, in the **Current Selection** group, click **Format Selection**.
3. Click **Axis Options** if it is not selected, and then do one or more of the following:
   - To change the number at which the vertical (value) axis starts or ends, for the **Minimum** or **Maximum** option, click **Fixed** and then type a different number in the **Minimum** box or the **Maximum** box.
   - To change the interval of tick marks and chart gridlines, for the **Major Unit** or **Minor Unit** option, click **Fixed** and then type a different number in the **Major unit** box or **Minor unit** box.
   - To reverse the order of the values, select the **Values in reverse order** check box.
   - To change the value axis to logarithmic, select the **Logarithmic scale** check box.
   - To change the placement of the axis tick marks and labels, select any of the options that you want in the **Major tick mark type**, **Minor tick mark type**, and **Axis labels** boxes.
   - To change the point at which you want the horizontal (category) axis to cross the vertical (value) axis, under **Horizontal axis crosses**, click **Axis value**, and then type the number that you want in the text box, or click **Maximum axis value** to specify that the horizontal (category) axis crosses the vertical (value) axis at the highest value on the axis.

Change the scale of the horizontal (category) axis in a chart

1. In a chart, click the horizontal (category) axis that you want to change, or do the following to select the axis from a list of chart elements:
   - Click anywhere in the chart. (This displays the **Chart Tools**, adding the **Design**, **Layout**, and **Format** tabs.)
   - On the **Format** tab, in the **Current Selection** group, click the arrow next to the **Chart Elements** box, and then click **Horizontal (Category) Axis**.
2. On the **Format** tab, in the **Current Selection** group, click **Format Selection**.
3. Click **Axis Options** if it is not selected, and then do one or more of the following:
   - To change the interval between tick marks, in the **Interval between tick marks** box, type the number that you want.
   - To change the interval between axis labels, under **Interval between labels**, click **Specify interval unit**, and then in the text box, type the number that you want.
   - To change the placement of axis labels, in the **Label distance from axis** box, type the number that you want.
   - To reverse the order of categories, select the **Categories in reverse order** check box.
   - To change the axis type to a text or date axis, under **Axis Type**, click **Text axis** or **Date axis**, and then select the appropriate options. Text and data points are evenly spaced on a text axis. A date axis displays dates in chronological order at set intervals or base units, such as the number of days, months, or years, even if the dates on the worksheet are not in order or in the same base units.
   - To change the placement of the axis tick marks and labels, select any of the options that you want in the **Major tick mark type**, **Minor tick mark type**, and **Axis labels** boxes.

- To change the point at which you want the vertical (value) axis to cross the horizontal (category) axis, under **Vertical axis crosses**, click **At category number**, and then type the number that you want in the text box, or click **At maximum category** to specify that the vertical (value) axis cross the horizontal (category) axis after the last category on the x-axis.

Tip
If the chart values are large numbers, you can make the axis text shorter and more readable by changing the display unit of the axis. For example, you can display chart values ranging from 1,000,000 to 50,000,000 as 1 to 50 on the axis and show a label that indicates that the units are expressed in millions.

- To change the value axis to logarithmic, select the **Logarithmic scale** check box.

Tip:
This type of scale is useful when the values that are plotted in the chart cover a very large range.

- To reverse the order of the values on the selected axis, select the **Values in reverse order** check box.

  Note: When you change the order of the values on the value (y) axis from bottom to top, the category labels on the category (x) axis will flip from the bottom to the top of the chart. Likewise, when you change the order of the categories from left to right, the value labels will flip from the left side to the right side of the chart.

- To specify the value at which the category (x) axis crosses the value (y) axis, type that value in the **Category (X) axis crosses at** box.
- To force the x-axis, cross the value axis at the highest value, and select the **Category (X) axis crosses at maximum value** check box. This effectively moves the category labels to the opposite side of the chart.

  Note: This option overrides the **Category X crosses at** value.

Tip
XY (scatter) charts show values on both the category (x) axis and the value (y) axis, while line charts show values on only the value (y) axis. This difference is an important factor in deciding which chart type to use. Because the scale of the line chart's category axis cannot be changed as much as the scale of the value axis that is used in the xy (scatter) chart, you might consider using an xy (scatter) chart instead of a line chart if you need to change the scaling of that axis or display it as a logarithmic scale.

APPENDIX D: CYP Factors

The following are recommended couple-year of protection (CYP) factors for sterilization, by country. *Note:* The CYP factors for most methods are constant across countries; the factor for sterilization varies across countries because of differences in national averages of when in the individual's reproductive life the sterilization is performed.

Country	CYP per Procedure	Country	CYP per Procedure
Global	***9***		
Africa	***8***	***Latin America***	***9***
Democratic Republic of the Congo	8	Bolivia	10
Ethiopia	8	Brazil	10
Gambia	8	Colombia	11
Ghana	8	Dominican Republic	12
Guinea	8	Ecuador	10
Kenya	9	El Salvador	12
Liberia	9	Guatemala	11
Madagascar	8	Mexico	8
Malawi	8	Nicaragua	11
Mali	7	Paraguay	11
Mauritius	9	Peru	9
Namibia	7	Trinidad and Tobago	9
Nigeria	8	Venezuela	9
Rwanda	8		
Sierra Leone	8	***Asia***	***10***
Tanzania	8	Bangladesh	11
Uganda	8	India	13
Zimbabwe	8	Indonesia	9
		Nepal	12
North Africa and the Near East	***8***	Pakistan	9
Egypt	7	Philippines	11
Jordan	8	Sri Lanka	11
Morocco	9	Thailand	10
Tunisia	9		
Turkey	9		

Adapted from: Stover, J., Bertrand, J. T., and Shelton, J. D. 2000. Empirically based conversion factors for calculating couple years of protection. *Evaluation Review* 24(1): 3–46.

APPENDIX E: Contraceptive Discontinuation Rates

	Contraceptive Discontinuation Rates						
	Pill	IUD	Male Condom	Injectables	Female Sterilization	Implants (Norplant)	Total
Sub-Saharan Africa							
Ethiopia (2005)	60.9	-	41.8	32.0	-	-	40.9
Malawi (2004)	52.3	-	61.9	32.5	-	-	35.8
Kenya (2003)	46.2	-	59.4	31.8			37.6
Tanzania (2004–2005)	40.5	-	45.0	36.5	-	-	37.8
Uganda (2006)	61.4		71.0	46.6			57.8
Zimbabwe (1994)	15.1	-	44.2	15.6	-	-	19.5
Zimbabwe (1999)	16.3	-	43.3	26.2	-	-	20.2
Zimbabwe (2005–2006)	15.7	-	53.7	24.3	-	-	20.2
North Africa/West Asia/Europe							
Albania (2008–2009)	42.8		31.7				26.9
Armenia (2000)	-	6.5	38.9	-	-	-	39.7
Armenia (2005)		6.1	31.0				32.1
Azerbaijan (2006)	-	6.7	48.2	-	-	-	27.5
Egypt (1992)	41.8	12.5	47.8	-	-	-	29.0
Egypt (1995)	46.2	14.2	55.7	52.1	-	-	29.8
Egypt (2000)	48.4	14.2	52.5	48.4	-	-	28.5
Egypt (2005)	50.2	15.2	37.9	45.5	-	19.3	30.6
Egypt (2008)	40.0	11.8	31.9	36.8	-	-	25.9
Jordan (1990)	63.5	20.9	63.8	-	-	-	44.6
Jordan (1997)	67.9	17.7	67.6	-	-	-	48.5
Jordan (2002)	55.4	12.8	56.0	55.2	-	-	42.0
Jordan (2007)	46.5	11.8	43.6	41.2	-	-	31.6
Moldova (2005)	49.8	6.6	38.8	-	-	-	37.8
Morocco (1992)	37.4	18.9	-	-	-	-	38.6
Morocco (2003–2004)	40.9	15.3	50.4	52.4	-	-	43.2
Turkey (1993)	55.1	10.1	49.0	-	-	-	36.8
Turkey (1998)	56.4	9.4	43.3	-	-	-	34.9
Ukraine (2007)	25.3	1.4	22.8	-	-	-	22.9
Central Asia							
Turkmenistan (2000)	72.8	11.7	58.5	-	-	-	58.0
South & Southeast Asia							
Bangladesh (1993–1994)	44.9	37.1	71.9	57.6	-	-	47.7
Bangladesh (1999–2000)	46.3	34.3	66.7	50.1	-	-	48.3

	Contraceptive Discontinuation Rates						
	Pill	IUD	Male Condom	Injectables	Female Sterilization	Implants (Norplant)	Total
Bangladesh (2004)	46.3	-	71.2	48.7	-	-	49.2
Bangladesh (2007)	54.2	32.7	75.7	53.0	-	-	56.5
India (2005–2006)	49.2	19.8	44.8	53.4	0.2		27.2
Indonesia (1991)	29.9	15.7	51.2	32.8	-	3.5	27.5
Indonesia (1994)	33.8	15.2	50.9	29.1	-	4.3	26.8
Indonesia (1997)	33.9	12.3	37.7	23.5	0.1	2.9	24.1
Indonesia (2002–2003)	31.9	8.9	38.8	18.4	-	2.7	20.7
Indonesia (2007)	38.8	9.9	38.3	23.0	-	5.7	26.3
Nepal (2006)	64.0		73.4	41.9			44.8
Philippines (1993)	40.6	22.6	59.8	-	-	-	35.6
Philippines (1998)	43.8	14.3	60.1	51.8	-	-	41.1
Philippines (2003)	39.2	14.0	58.0	52.7	-	-	39.0
Vietnam (1997)	33.2	10.3	32.0	-	-	-	17.6
Vietnam (2002)	36.1	12.5	37.8	-	-	-	24.8
Latin America & the Caribbean							
Bolivia (1994)	58.9	11.9	69.8	78.2	-	-	41.1
Brazil (1991)	51.1	-	82.9	72.7	-	-	46.8
Brazil (1996)	44.8	-	60.0	63.7	-	-	43.4
Colombia (1990)	44.9	20.0	57.4	63.7	-	-	39.3
Colombia (1995)	52.4	19.1	64.8	67.4	0.1	-	50.3
Colombia (2000)	49.7	16.8	61.5	62.1	-	-	52.1
Colombia (2005)	47.2	16.6	52.9	50.7	-	-	42.0
Dominican Republic (1991)	63.4	37.6	79.1	-	-	-	52.5
Dominican Republic (1996)	59.2	32.7	82.8	-	-	-	52.7
Dominican Republic (1999)	60.4	-	-	-	-	-	54.8
Dominican Republic (2002)	51.7	27.2	67.4	67.0	-	-	47.5
Guatemala (1995)	46.6	18.5	50.6	56.0	0.8	-	35.8
Guatemala (1998–1999)	51.4	-	68.9	56.0	-	-	42.3
Nicaragua (1998)	49.2	24.3	63.3	59.7	-	-	39.7
Paraguay (1990)	60	15.5	72.2	71.2	-	-	57.1
Peru (1992)	56.4	11.9	66.7	66.6	-	-	47.2
Peru (1996)	53.8	17.4	59.2	53.6	-	-	45.2
Peru (2000)	54.4	15.1	53.3	40.6	-	-	40.0
Peru (2004)	60.5	21.1	57.0	43.4	-	-	47.2
Average	**47.2**	**16.5**	**54.5**	**47.4**	**0.3**	**6.4**	**38.3**

Sources: ORC Macro. 2007. MEASURE DHS STATcompiler. Accessed at www.measuredhs.com; and individual country final reports.

APPENDIX F: Modern Method and Injectable Prevalence Growth Rates

Average Annual Gain in Injectable Use among All Women, 1990s–2000s, Selected Countries		
	Annual gain, injectable use	
Region/country	**1990s**	**2000s**
Africa		
East/Southern Africa		
Ethiopia		0.9
Kenya	0.7	2.2
Malawi	1.5	0.2
Rwanda	-0.6	2.2
Tanzania	0.6	0.3
Uganda	0.5	0.5
Zambia	0.2	0.6
West Africa		
Burkina Faso	0.1	0.3
Cameroon	0.04	0.1
Ghana	0.2	0.1
Nigeria	0.1	-0.1
Senegal	0.3	0.1

Sources: STATCompiler and selected Demographic and Health Surveys

Average Annual Gain in Injectable Use among Married Women, 1990s–2000s, Selected Countries		
	Annual gain, injectable use	
Region/country	**1990s**	**2000s**
Africa		
East/Southern Africa		
Ethiopia		1.4
Kenya	0.9	1.5
Malawi	1.9	5.6
Rwanda	-0.8	3.5
Tanzania	0.6	0.3
Uganda	0.7	0.8
Zambia	0.2	0.8
West Africa		
Burkina Faso	0.2	0.4
Cameroon	.04	0.1
Ghana	0.5	0.2
Nigeria	-0.1	0.2
Senegal	0.4	0.2

Sources: STATCompiler and selected Demographic and Health Surveys and Multiple Indicator Cluster Surveys

Average Annual Gain in Modern Method Use among All Women, 1990s–2000s, Selected Countries		
	Annual gain, any modern method use	
Region/country	**1990s**	**2000s**
Africa		
East/Southern Africa		
Ethiopia		1.0
Kenya	1.0	3.3
Malawi	1.9	0.2
Rwanda	–0.7	0.2
Tanzania	1.4	0.4
Uganda	1.1	–0.2
Zambia	1.1	0.97
West Africa		
Burkina Faso	0.3	1.0
Cameroon	0.5	0.9
Ghana	0.7	–0.4
Nigeria	0.6	0.0
Senegal	0.6	0.1
Asia		
South Asia		
Bangladesh	1.2	–0.03
Nepal	1.2	–0.3
Southeast Asia		
Cambodia		1.0
Indonesia	1.3	0.17
Philippines	0.4	0.9
Latin America/Caribbean		
Bolivia	0.9	1.4
Colombia	1.1	1.1
Dom. Rep.	1.5	0.7

Sources: STATCompiler and selected Demographic and Health Surveys

Average Annual Gain in Modern Method Use among Married Women, 1990s–2000s, Selected Countries		
	Annual gain, any modern method use	
Region/country	**1990s**	**2000s**
Africa		
East/Southern Africa		
Ethiopia		1.5
Kenya	0.8	1.4
Malawi	2.3	0.5
Rwanda	–0.9	5.7
Tanzania	1.2	0.5
Uganda	1.7	–0.1
Zambia	1.4	1.5
West Africa		
Burkina Faso	0.1	1.0
Cameroon	0.4	0.9
Ghana	0.6	–0.4
Nigeria	0.6	–0.1
Senegal	0.8	0.3
Asia		
South Asia		
Bangladesh	1.4	–0.9
Nepal	1.9	1.8
Southeast Asia		
Cambodia		1.7
Indonesia	1.3	1.0
Philippines	0.7	1.0
Latin America/Caribbean		
Bolivia	1.9	1.9
Colombia	0.9	0.8
Dom. Rep.	1.5	0.8

APPENDIX G: Abortion Ratios

Believed to Be Complete	
Australia, 1995–1996	26.4
Belarus, 1996	61.9
Belgium, 1996	11.2
Bulgaria,1996	55.2
Canada, 1995	22
Cuba, 1996	58.6
Czech Republic,1996	34
Denmark, 1995	20.3
England & Wales, 1996	20.5
Estonia, 1996	56
Finland, 1996	14.7
Germany, 1996	14.1
Hungary, 1996	42.1
Israel, 1995	13.1
Kazakhstan, 1996	41.3
Latvia, 1996	53.9
Netherlands, 1996	10.6
New Zealand, 1995	19.1
Norway, 1996	19.1
Puerto Rico, 1991–1992	23
Scotland, 1996	17.2
Singapore, 1996	22.8
Slovak Republic, 1996	28.8
Slovenia, 1996	35.7
Sweden, 1996	25.2
Switzerland, 1996	13.3
Tunisia, 1996	7.8
United States, 1996	25.9

Incomplete or of Unknown Completeness	
Albania, 1996	23.7
Armenia, 1996	39.4
Azerbaijan,1996	18
Bangladesh, 1995–1996	3.1
China, 1995	27.4
Croatia, 1996	18.7
France, 1995	17.7
Georgia, 1996	33.2
Hong Kong, 1996	27.9
India, 1995–1996	2.1
Ireland, 1996	8.9
Italy, 1996	21.1
Japan, 1995	22.4
Korea (South), 1996	24.6
Kyrgyzstan, 1996	17.5
Lithuania, 1996	41.5
Macedonia, 1996	31.1
Moldova, 1996	42.7
Mongolia, 1996	18.2
Romania, 1996	63
Russian Federation, 1995	62.6
South Africa, 1997	2.4
Spain, 1996	12.6
Tajikistan, 1990	21.2
Turkey, 1993	20.5
Turkmenistan, 1990	22.9
Ukraine, 1996	57.6
Uzbekistan, 1996	9.5
Vietnam, 1996	43.7
Yugoslavia, 1993	45.8
Zambia, 1983	0.4

Region and subregion	Ratio
Total	**26**
Developed regions	**42**
Excluding Eastern Europe	26
Developing regions	**23**
Excluding China	20
Africa	**15**
Eastern Africa	16
Middle Africa	14
Northern Africa	12
Southern Africa	12
Western Africa	15
Asia	**25**
Eastern Asia	34
South-central Asia	18
South-eastern Asia	28
Western Asia	20
Europe	**48**
Eastern Europe	65
Northern Europe	23
Southern Europe	34
Western Europe	17
Latin America	**27**
Caribbean	35
Central America	21
South America	30
Northern America	**26**
Oceania	**20**

Source: Henshaw, Singh, & Haas, 1999.

APPENDIX H: Maternal Mortality Ratios

Country or Area	Maternal Mortality Ratio (2008)	Country or Area	Maternal Mortality Ratio (2008)
Afghanistan	1,400	Congo, Democratic Rep. of	670
Albania	31	Costa Rica	44
Algeria	120	Côte d'Ivoire	470
Angola	610	Croatia	14
Argentina	70	Cuba	53
Armenia	29	Cyprus	10
Australia	8	Czech Republic	8
Austria	5	Denmark	5
Azerbaijan	38	Djibouti	300
Bahamas	49	Dominican Republic	100
Bahrain	19	Ecuador	140
Bangladesh	340	Egypt	82
Barbados	64	El Salvador	110
Belarus	15	Equatorial Guinea	280
Belgium	5	Eritrea	280
Belize	94	Estonia	12
Benin	410	Ethiopia	470
Bhutan	200	Fiji	26
Bolivia	180	Finland	8
Bosnia and Herzegovina	9	France	8
Botswana	190	Gabon	260
Brazil	58	Gambia	400
Brunei Darussalam	21	Georgia	48
Bulgaria	13	Germany	7
Burkina Faso	560	Ghana	350
Burundi	970	Greece	2
Cambodia	290	Guatemala	110
Cameroon	600	Guinea	680
Canada	12	Guinea-Bissau	1,000
Cape Verde	94	Guyana	270
Central African Republic	850	Haiti	300
Chad	1,200	Honduras	110
Chile	26	Hungary	13
China	38	Iceland	5
Colombia	85	India	230
Comoros	340	Iran (Islamic Rep)	30
Congo	580	Iraq	75

Country or Area	Maternal Mortality Ratio (2008)	Country or Area	Maternal Mortality Ratio (2008)
Ireland	3	Niger	820
Israel	7	Nigeria	840
Italy	5	Norway	7
Jamaica	89	Oman	20
Japan	6	Pakistan	260
Jordan	59	Panama	71
Kazakhstan	45	Papua New Guinea	250
Kenya	530	Paraguay	95
Korea	370	Peru	98
Kuwait	9	Philippines	94
Kyrgyzstan	81	Poland	6
Lao People's Democratic Republic	580	Portugal	7
Latvia	20	Qatar	8
Lebanon	26	Republic of Korea	18
Lesotho	530	Republic of Moldova	32
Liberia	990	Romania	27
Libyan Arab Jamahiriya	64	Russian Federation	39
Lithuania	13	Rwanda	540
Luxembourg	17	Saudi Arabia	24
Macedonia	9	Senegal	410
Madagascar	440	Sierra Leone	970
Malawi	510	Singapore	9
Malaysia	31	Slovakia	6
Maldives	37	Slovenia	18
Mali	830	Solomon Islands	100
Malta	8	Somalia	1,200
Mauritania	550	South Africa	410
Mauritius	36	Spain	6
Mexico	85	Sri Lanka	39
Mongolia	65	Sudan	750
Morocco	110	Suriname	100
Mozambique	550	Swaziland	420
Myanmar	240	Sweden	5
Namibia	180	Switzerland	10
Nepal	380	Syrian Arab Republic	46
Netherlands	9	Tajikistan	64
New Zealand	14	Thailand	48
Nicaragua	100	Timor-Leste	370

Country or Area	Maternal Mortality Ratio (2008)
Togo	350
Trinidad and Tobago	55
Tunisia	60
Turkey	23
Turkmenistan	77
Uganda	430
Ukraine	26
United Arab Emirates	10
United Kingdom	12
United Republic of Tanzania	790
United States of America	24
Uruguay	27
Uzbekistan	30
Venezuela	68
Viet Nam	56
Yemen	210
Zambia	470
Zimbabwe	790

Source: World Health Organization, 2010.

APPENDIX I: Infant and Child Mortality Rates

Country (and Survey Year)	Infant Mortality Rate (per 1,000)	Under-5 Mortality Rate (per 1,000)	Country (and Survey Year)	Infant Mortality Rate (per 1,000)	Under-5 Mortality Rate (per 1,000)
Albania (2002 RHS)	26.8	30.7	Honduras (2005–2006)	23.4	29.6
Angola (2006–2007)	69	104.7	India (2005–2006)	57	74.3
Armenia (2005)	25.6	29.8	Indonesia (2007)	34.2	44.4
Azerbaijan (2006)	43	49.5	Jordan (2009)	23.1	28.1
Bangladesh (2007)	51.5	65	Kazakhstan (1999)	61.9	71.4
Benin (2006)	67	124.9	Kenya (2008–2009)	51.7	73.6
Bolivia (2003)	53.6	75	Kyrgyz Republic (1997)	61.3	72.3
Botswana (1988)	38.4	52.6	Lesotho (2004)	91	112.8
Brazil (1996)	39.3	48.8	Liberia (2009)	72.6	114.4
Burkina Faso (2003)	81.4	183.7	Madagascar (2008–2009)	47.9	71.7
Burundi (1987)	73.7	152.5	Malawi (2004)	76.1	133.2
Cambodia (2005)	65.6	83.3	Mali (2006)	95.8	190.5
Cameroon (2004)	74.1	143.6	Mauritania (2000–2001)	69.9	104.2
Central African Republic (1994–1995)	96.7	157.5	Mexico (1987)	47.4	61.4
Chad (2004)	101.7	190.6	Moldova (2005)	12.8	13.6
Colombia (2005)	18.7	22.2	Morocco (2003–2004)	40.4	47.4
Comoros (1996)	77.3	104	Mozambique (2003)	100.7	152.4
Congo-Brazzaville (2005)	75.5	116.6	Namibia (1992)	56.6	83.9
Congo, Democratic Republic of (2007)	91.8	147.9	Namibia (2006–2007)	46.1	69.4
Cote d'Ivoire (1998–1999)	112.2	180.7	Nepal (2006)	47.9	61.2
Dominican Rep. (2007)	32.1	36.5	Nicaragua (2006 RHS)	29	35.4
Ecuador (2004 RHS)	29.8	34.7	Niger (2006)	81.4	197.6
Egypt (2008)	24.5	28.3	Nigeria (2008)	75.3	156.9
El Salvador (2002 RHS)	24.6	30.5	Pakistan (2006–2007)	77.7	94.2
Eritrea (2002)	47.7	93.3	Paraguay (2004 RHS)	29.1	33.3
Ethiopia (2005)	77	123.5	Peru (2000)	33.3	46.7
Gabon (2000)	57.3	88.6	Philippines (2008)	24.9	33.5
Georgia (2005 RHS)	21.1	25	Rwanda (2007–2008)	62.3	102.6
Ghana (2008)	50.3	80	Senegal (2008–2009)	53.6	84.8
Guatemala (2002 RHS)	38.8	52.9	Sierra Leone (2008)	88.9	139.8
Guinea (2005)	91.4	163.2	South Africa (1998)	45.4	59.4
Haiti (2005–2006)	57.3	86.3	Sri Lanka (1987)	24.7	34

Country (and Survey Year)	Infant Mortality Rate (per 1,000)	Under-5 Mortality Rate (per 1,000)	Country (and Survey Year)	Infant Mortality Rate (per 1,000)	Under-5 Mortality Rate (per 1,000)
Sudan (1989–1990)	70	123.7	Turkmenistan (2000)	73.9	94.3
Swaziland (2006–2007)	85.5	119.9	Uganda (2006)	71.1	127.6
Tanzania (2004–2005)	68	112	Ukraine (2007)	13.9	16.9
Thailand (1987)	35.2	44.1	Uzbekistan (1996)	49.1	59.3
Togo (1998)	79.7	146.3	Vietnam (2002)	18.2	23.6
Trinidad & Tobago (1987)	28	31.6	Yemen (1997)	75.3	104.8
Tunisia (1988)	48	61.9	Zambia (2007)	70.4	118.7
Turkey (1998)	42.7	52.1	Zimbabwe (2005–2006)	59.9	82.5

Source: StatCompiler: Most recent DHS for each country.

APPENDIX J: Definitions, Acronyms, and Formulas

Abortion Ratio
The number of induced abortions per 100 known pregnancies (Henshaw, Singh, & Haas, 1999). In Reality √, this ratio is used to calculate the number of abortions averted by a particular family planning scenario, using the following formula:

Number of unintended pregnancies averted
*
(abortion ratio/100))

Adopter
Adopters (also known as new users) are all of the people who begin using a method in any given year. The formula for calculating the number of *adopters* in a given year in Reality √ is:

(Number of users in the current year –number of users in the previous year)
+
(Number of users in the previous year * discontinuation rate)

Even if an individual has been using a method and switches to another method, s/he will be considered an adopter of that method in the year in which s/he begins to use it.

Census
A complete population count taken by a national census bureau every 10 years. A census details the age and sex structure of a national population and various subpopulations, providing figures for women of reproductive age (WRA) and married women of reproductive age (MWRA) or percentage in union (FPLM, 2000).

Child Mortality Rate
The proportion of children who will die in their first five years of life per 1,000 live births. In Reality √, this rate is used to calculate the number of child deaths averted, using the following formula:

Number of unintended births averted * (child mortality rate [child deaths/1,000 births])

Commodities and Supplies
The supplies (pills, injections, IUDs, surgical equipment, etc.) needed to provide contraceptive protection for one year.

Continuation Rate
The cumulative probability that acceptors of a contraceptive method will still be using any contraceptive method offered by the program after a specified period of time (e.g., one year) (Bertrand & Escudero, 2002).

Contraceptive Prevalence Rate (CPR)
The percentage of women of reproductive age who are using (or whose partner is using) a contraceptive method at a particular point in time, almost always reported for women married or in a sexual union. Generally, CPR includes all contraceptive methods (modern and traditional), but it may include modern methods only (Bertrand & Escudero, 2002). This information can generally be found through population-based surveys such as the Demographic and Health Survey (DHS) or the Multiple Indicator Cluster Survey (MICS).

Couple-Years of Protection (CYP)
The amount of contraception necessary to protect one couple from pregnancy for one year, based upon the volume of all contraceptives sold or distributed to clients during that year. It is calculated by multiplying the quantity of each method distributed to clients by a factor representing the number of units needed to protect a couple for one year, to yield an estimate of the duration of contraceptive protection provided per unit of that method. The calculation takes into account that some methods, like condoms and oral contraceptives, for example, may be used incorrectly and then discarded, or that IUDs and implants may be removed before their lifespan is realized (USAID, 2009). CYP is generally used to assess program progress, not to plan for service delivery.

Demand for Family Planning
The percentage of MWRA who either are using a family planning method or have expressed an unmet need for family planning (Bertrand & Escudero, 2002).

Discontinuation Rate
The cumulative probability that acceptors of a contraceptive method will discontinue using the method after a specified period of time (e.g., one year). It is the inverse of the continuation rate (Bertrand & Escudero, 2002).

Demographic and Health Survey (DHS)
An ongoing program of nationally representative household surveys that provide data on a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. These surveys are implemented by Macro International, Inc., and collaborating organizations (Measure DHS, no date). Data from the DHS can be found in the DHS reports at www.measuredhs.com/or at www.statcompiler.com/.

Failure Rate
The percentage of women experiencing an unintended pregnancy during the first year of use of a particular contraceptive method. The failure rate is the inverse of the effectiveness rate. Data are available for typical use and perfect use of contraception (Trussell, 2004).

Infant Mortality Rate
The number of infants who die in their first year of life for every 1,000 live births. In Reality √, this rate is used to calculate the number of infant deaths averted, using the following formula:

Number of unintended births averted * infant mortality rate

Long-Acting and Permanent Methods (LA/PMs)
Contraceptive methods that provide the longest duration of protection—the hormonal implant, the intrauterine device (IUD) (both of them long-acting methods), male sterilization (vasectomy), and female sterilization (both of them permanent methods).

Maternal Mortality Ratio
The number of maternal deaths per 100,000 live births. In Reality √, this ratio is used to calculate the number of maternal deaths averted, using the following formula:

Number of unintended births averted * maternal mortality ratio

Method Mix
The mix of contraceptive methods used by the population, expressed as the percentage that each method constitutes out of all contraceptives used (FPLM, 2000). If, for example, a particular method is used by 5% of women, and the CPR for the population of interest is 30%, then that method comprises 16.7% of the total method mix (5/30).

Modern Methods of Contraception
Condoms, injectables, implants, IUDs, oral contraceptives and other hormonal methods, vaginal methods (spermicides, diaphragms, or caps), the standard days method, and male or female sterilization.

Married Women of Reproductive Age (MWRA)
Women aged 15–49 who either are formally married or live with a male sexual partner (consensual unions). MWRA is often used as an estimate of the percentage of WRA who are potentially at risk of pregnancy (FPLM, 2000). (This measure is also known as "currently married women.")

Population Growth Rate
Annual rate of population growth, measured as births minus deaths plus migration, or the more commonly available rate of natural increase, which is simply births minus deaths. It should be noted that these rates measure the growth of an entire population and may differ somewhat from the rate of growth for MWRA (FPLM, 2000).

Pregnancy Rate
The percentage of sexually active women of reproductive age who will become pregnant in a given year if not using contraception (Trussell, 2004). In Reality √, this rate is used to calculate the number of unintended pregnancies averted, using the following formula:

(Number of users * Pregnancy rate)
–
(Number of users * method-specific failure rate)

Standard Days Method (SDM)
A method in which a woman keeps track of estimated high- and low-fertility points during her menstrual cycle, using a product called CycleBeads (Arévalo, Jennings, & Sinai, 2001).

Traditional Methods of Contraception
Nonsupply methods, such as periodic and postpartum abstinence, total abstinence if for contraceptive reasons, withdrawal, douching, and folk methods (IPPF, no date).

Unmet Need for Contraception
The number or percentage of women currently married or in union who are fecund and who desire to either terminate or postpone childbearing, but who are not currently using a contraceptive method. The total number of women with an unmet need for family planning consists of two groups of women: those with an unmet need for limiting (i.e., who never want another birth), and those with an unmet need for spacing (i.e., who want another birth, but only after a certain period of time) (Bertrand & Escudero, 2002).

Users
The people using a particular contraceptive method in a given year (also known as clients or customers). In Reality √, numbers of users are calculated by multiplying the contraceptive prevalence rate (CPR) by the number of women of reproductive age or of married women of reproductive age in the population.

Women of Reproductive Age (WRA)
Number of women in their reproductive years (ages 15–49) (FPLM, 2000).

APPENDIX K: Troubleshooting for Reality √

The following are the most commonly encountered Reality √ problems and their solutions. For additional support with or to share feedback on the tool, please feel free to contact The RESPOND Project at info@respondproject.org.

Problem

I've entered my CPR data into the *Past Trend Continuation* worksheet, but no average annual increase or decrease or projection of the trend has been generated.

Solutions

Make sure that you have entered the values of the years that correspond to those data in Cells B13 to F13. Reality √ considers the difference between these years when calculating the average annual rate of increase or decrease.

Make sure that you have macros enabled on your machine by following the steps listed on pages 6–7 of the User's Guide. Close and reopen the Reality √ document.

Problem

I tried to enter the total CPR or modern method CPR in the cells in Rows 30, 31, or 32, but I received an error message.

Solution

Remember that in Reality √, data are only entered in the green cells; the cells in Rows 30 through 32 are summary cells that show the sum of the method-specific CPRs that are entered in the green cells above. Because they contain formulas, they are locked, to minimize the possibility of error.

To look at the total CPR or the modern method CPR, enter the method-specific CPRs in the green cells above. Alternately, you can enter the total CPR and/or modern method CPR in the cells labeled as "other" in Rows 27 and 28 or in those designated for the pill or other methods; you would then need to change the label(s) in Column A to correctly identify the data contained in the cells.

Problem

I entered CPR values for multiple years, but some of the future CPR values projected seem unreasonably high or low.

Solution

When two CPR values are entered, Reality √ creates a simple linear projection by calculating the average annual difference (increase or decrease) between those values and projecting that change to continue in the future. When more than two values are entered, the tool creates a

line of best fit between the points. When a sharp increase or decrease occurs between the CPR values you enter, the average annual change will be significant and, when projected forward, may produce values as low as zero or as high as 100. These projections are obviously unrealistic and should be discounted. A solution is to enter additional data points that may provide a more realistic indication of the past rate of change and produce a more realistic projection of the continuation of those trends.

Problem

I changed the years of the CPR data sources, and my population data have disappeared.

Solution

Reality √ automatically erases the population data when the CPR years are adjusted; because your years have changed, the population figures corresponding to those years will need to change as well.

Problem

I entered CPR values for all methods of interest, but the values for the outputs below (users, adopters, commodities, etc.) are missing or incomplete.

Solution

Verify that you have entered correct population data for all years of interest; Reality √ requires both CPR and population data to generate outputs.

Problem

I attempted to generate data for the population of married women of reproductive age using the population calculator, but the tool generated a population of zero.

Solution

The tool does not contain default values for the percentage of women of reproductive age who are married for every country, just for those that have had Demographic and Health Surveys. If you selected a country that does not have a default value for the percentage of women of reproductive age who are married and checked the "MWRA" box but did not enter a value, the tool assumed that 0% of women of reproductive age are married and calculated a value of zero. Enter a value or estimated value of the percentage of WRA that are married in the grey box.

Problem

I receive an error message when I attempt to use the "Copy from Calculator" button.

Solution

Make sure that the years in the Population Calculator align with those in Reality √. When you are working in the *Past Trend Continuation* worksheet, the first year in the Population Calculator must be the same as the year in Cell F34 of the *Past Trend Continuation* worksheet, and the end year can be any year up to 25 years in the future. When working in the *Future Goals* worksheet, the first year in the Population Calculator must be the same as that in Cell D14, while the last year must be the same as that in Cell C14.

Verify that you only have one Reality √ workbook and one Population Calculator workbook open at the same time.

Make sure that you have macros enabled on your machine by following the steps listed on pages 6–7 of the *User's Guide*. Close and reopen the Reality √ document and the Population Calculator.

Problem

I manually copied and pasted the population values into the *Future Goals* worksheet. The population value for the final (target) year appears in a column that appears next to the second-to-last year, while the population cell for the final year is blank.

Solution

The *Future Goals* worksheet in Reality √ contains macros, automatic scripts that adjust the number of columns that appear based on the number of years for which you are projecting. A number of blank columns are hidden between the second-to-last and final years; when you copy and paste the population values into the first cells, the tool adds the additional column, as it thinks that you have increased the difference between the years.

Copy and paste the population value from the column between the second-to-last and final years into the correct cell for the final year, then delete it from that additional column (do not cut and paste or drop and drag the value from one column to the next, as an error will occur with the formulas). Highlight the additional column that appeared by selecting the letter of that column from the top (next to the final column, AD). Right-click the column and select "Hide."

In the future, copy and paste the value for your final year separately to avoid any problems.

Problem

The Population calculators are not working; when I select "Calculate," nothing happens.

Solution

Make sure that you have enabled macros on your machine by following the steps listed on pages 6–7 of the *User's Guide*. Close and reopen the spreadsheet.

Problem

I am trying to save a Reality √ file that I have created from the CD-ROM, but I receive an error message that states that the file is "read-only."

Solution

The "Save" command is to save the file onto the CD-ROM from which it came, which is not possible; use the "Save As" feature to save the file onto your own computer.

Problem

When I paste values from the method mix calculators into Reality √, they appear as blank cells and the cells linked by formulas show a #VALUE! Error.

Solution

Use the "Paste Special" feature described on page 52 of the *User's Guide*.

Problem

I entered the estimated number of facilities able to provide each service in Cells C139 through C153, but no outputs have been generated.

Solution

Be sure to enter the estimated number of client visits per year in Cells B139 through B153; if these are left blank, the tool assumes that clients will make zero annual visits.

Problem

I am running multiple scenarios in the same workbook and I want to view graphs for each scenario. I copied the graphs tab to create graphs for the second scenario, but I have received an error message.

Solution

You can run multiple scenarios in the same workbook by using the "Move or Copy" feature. However, the graphs worksheets correspond only to the first scenario created in the original *Past Trend Continuation* or *Future Goals* worksheet. To view graphs for each scenario, it is best to create each scenario in a separate workbook.

Problem

The graphs do not seem to represent the latest data that I have entered into the *Past Trend Continuation* or *Future Goals* worksheet.

Solution

Try clicking on the "Update Graphs" button at the top of the graphs page; updates to the data may not be automatically reflected in the graphs.