



Planning Guide for a Total Market Approach to Increase Access to Family Planning

Module 2: In-depth Analyses of the Family Planning Market

Dominique Meekers
Sarah C. Haynes
Kathryn Kampa

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Dominique Meekers, MEASURE Evaluation, Tulane University

Sarah C. Haynes, MEASURE Evaluation, University of California, Davis

Kathryn Kampa, MEASURE Evaluation, Tulane University

MEASURE Evaluation
Carolina Population Center
University of North Carolina at Chapel Hill
400 Meadowmont Village Circle, 3rd Floor
Chapel Hill, North Carolina 27517
Phone: +1 919-445-9350 | Fax: +1 919-445-9353
Email: measure@unc.edu
www.measureevaluation.org

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ABBREVIATIONS

CLMIS	computerized logistics management information system
CPR	contraceptive prevalence rate
CWI	comparative wealth index
DHS	Demographic and health surveys
IRB	institutional review board
IUD	intrauterine device
IWI	international wealth index
MICS	Multiple Indicator Cluster Surveys
MIS	Management Information System
NGO	nongovernmental organization
PMA2020	Performance Monitoring and Accountability 2020
TMA	total market approach
TMASCT	Total Market Approach Stewardship Capacity Tool
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UON	universe of need
USAID	U.S. Agency for International Development

1. INTRODUCTION

The objective of a total market approach (TMA) for family planning is to increase use of family planning products and services by means of a rational and efficiently segmented market in which key groups have access to a full range of family planning products and services (USAID, n.d.). TMA may also help reduce dependence on public funding. TMA requires a coordinated approach in which family planning suppliers and donors from the three sectors—the public, nongovernmental organization (NGO), and commercial sectors—work together and use their comparative advantage to grow the total market (Brady, Wedeen, Hutchings, & Parks, 2016; Pollard, 2007). Because coordination between the sectors is an important element of TMA, it is more likely to succeed when a specific entity takes responsibility for stewarding this coordination. Ideally, the government will take on this role (Brady, et al., 2016).

A landscaping exercise is recommended to assess the levels of interest of the government, donors, and key stakeholders from the other sectors to pursue TMA programming (Brady et al., 2016). If they decide to move forward, the government and its partners should make TMA decisions that are based on a thorough analysis of data about aspects of the family planning market, which may include consumer use and preferences, their willingness and ability to pay for products and services, and data about trends in the family planning market itself. This requires an in-depth analysis of the family planning market. Such an analysis should build on the desk review of the literature and the stakeholder analysis conducted during the TMA landscaping exercise, by incorporating additional data or conducting new analyses of data.

This document reviews the issues involved in in-depth analyses of the family planning market that can be used to inform the development of a TMA.

WHAT IS MARKET SEGMENTATION ANALYSIS FOR FAMILY PLANNING?

Market segmentation analysis refers to the process of analyzing quantitative and qualitative data to divide the universe of users and potential users of a product or service into more homogeneous subgroups that can be reached through distinct service delivery and marketing strategies. Segmentation analyses identify segments of the population that are most likely to purchase the products and services and provide information needed to tailor the products and services to those specific groups (Chapman, Collumbien, & Karlyn, 2006). Users and potential users are split into subgroups (market segments) that have similar characteristics or product needs. The segmentation can be based on sociodemographic and economic characteristics, psychographics (interests, attitudes, and opinions), and lifestyles. Information about each segment is then used to more effectively reach that group. Knowledge about segments that are potentially interested in using the product or services guides decisions about new markets to pursue.

In the family planning and reproductive health arena, market segmentation has been an invaluable tool to more effectively target public resources to low-income groups (Fahnestock, 2008; Karim, Sarley & Hudgins, 2007; Market Development Approaches Working Group, 2009; USAID DELIVER Project, 2010). Market segmentation studies typically provide information on the following:

- The socio-demographic and economic characteristics of market segments (for example, different wealth levels)
- The types of supply sources for products and services (public sector, NGO, commercial)
- Trends and differentials in contraceptive prevalence, method mix, reasons for nonuse of family planning, unmet need, total demand for family planning, intention to use family planning in the future, and fertility rates. In some cases, they also provide estimates of the total number of family planning users

HOW CAN DATA INFORM A TMA PLAN?

In an efficiently segmented market, free and subsidized products and services will be used almost exclusively by those unable to obtain commercial products. To achieve this, the role of each sector (public, NGO, and commercial) should be defined with the objective of maximizing equity and efficiency. Developing evidence-based TMA strategies requires up-to-date data on the market size and growth and on the relevant market segments (USAID Contraceptive Security Team, s.d.).

A total market approach requires an understanding of the key characteristics of the market, such as size, equity, accessibility, and sustainability. Research on health impact and market equity is also needed (Barnes, Vail, & Crosby, 2012). Specific research topics may include the following:

- **Market size and growth:** What is the size of the market and how much growth potential is there? TMA is more likely to succeed when the market is sufficiently large to create a potential for profit for the commercial sector. To estimate the size of the market, one can examine data on contraceptive sales, the contraceptive prevalence rate and number of users, the contraceptive method mix, the total need for family planning (universe of need), the unmet need for family planning, and how have these changed over time. Examining data on the unmet need for family planning and intentions to use family planning in the future can give insights about future market potential.
- **Market accessibility:** Is the family planning market becoming more accessible? Data about knowledge of different sources that provide family planning, the number of family planning outlets, willingness to pay for contraceptive commodities and services, and the frequency of contraceptive commodity stockouts provide valuable information about trends and differentials in the accessibility of family planning.
- **Market sustainability:** Is the market gradually becoming less dependent on subsidies? What is the market share of the public, NGO, and commercial sectors? Information on the market share of the public, NGO, and commercial sectors can be estimated from sales data, survey data on use of specific brands, and data on the type of source where users obtain family planning products.
- **Health impact:** Is the market meeting the current need for family planning, and is unmet need declining? Trends in unmet need for family planning can shed light on the health impact of the market.
- **Market equity:** Which population segments are disadvantaged in terms of access to family planning, method choice, ability to pay for family planning, and use of family planning? Is the market reaching an increased share of these at-risk populations? From which sources do different population subgroups obtain family planning products and services? Which segments of the population would be unable to obtain unsubsidized family planning products and services? Disaggregating data by socioeconomic status and other factors can show the extent to which the poor and other vulnerable groups are benefiting from the market trends.

Ideally, the government and its partners will make TMA decisions that are based on a thorough analysis of data about various aspects of the family planning market, which may include consumer use and preferences, their willingness and ability to pay for products and services, and trends in the family planning market itself.

One of the main challenges is that the data required for an in-depth market analysis are not always available. The available data may be incomplete, outdated, or unreliable. In addition, some data may be difficult to obtain, because they are not in the public domain (Barnes et al., 2012). As a result, TMA market research analyses have not used indicators consistently. Furthermore, because TMA is a relatively new approach, there has been a lack of clear and consistent guidance on how to perform data analyses of the family planning market potential that are needed to prepare for a TMA. This document builds on earlier documentation on the TMA process (such as Barnes, et al., 2012), by providing more in-depth information about the data collection and analyses needed for TMA.

ABOUT THIS DOCUMENT

This document is an abbreviated version of the Handbook for Research on the Family Planning Market (Meekers, et al., 2016a, 2016b). The aim of this version is to provide TMA planners (including program implementers, policymakers, government officials, and donors) with a basic overview of the data that should be collected to inform the TMA plan, to promote the standardization of indicators, and to offer general guidance for basic data analyses. The overview covers the following topics:

- Key indicators for market research for family planning TMA
- Data sources needed to calculate key indicators, including both primary and secondary data sources
- Analyzing patterns and trends in key TMA indicators, focusing on market equity and vulnerable populations
- Assessing the capacity of the government to steward the TMA process
- Approaches for disseminating the findings from TMA market research to key stakeholders

Readers who need more technical detail are referred to the handbook (Meekers, et al., 2016a, 2016b), which also offers numerous tools to facilitate data collection and analysis (such as model questionnaires, research protocols and consents form templates for Institutional Review Board submissions, and software code for calculating wealth indicators).

2. OVERVIEW OF KEY TMA INDICATORS

A number of TMA documents mention indicators to inform the development of TMA plans and to monitor their progress. However, the specific indicators used tend to vary across documents. Few documents have made explicit recommendations for TMA indicators to be tracked (Barnes, et al., 2012; Gardiner, Schwanenflugel, & Grace, 2006; Pallin & Meekers, 2014; Population Services International, 2012), and as yet there is no compendium that standardizes the measurement of TMA indicators.

WHICH TMA INDICATORS SHOULD BE TRACKED?

The Market Development Approaches Working Group of the Reproductive Health Supplies Coalition (Barnes, et al., 2012) identified four broad characteristics of the market that should be tracked:

- Market size
- Market accessibility
- Market sustainability
- Market equity

Four broad characteristics of the family planning market should be tracked: market size, market accessibility, market sustainability, and market equity. Countries that are engaging in TMA planning should aim to track and analyze as many of the recommended key indicators as feasible, given the available resources.

Table 1 shows a selection of recommended key indicators for each of these four broad categories. Countries planning a TMA should track and analyze as many of these indicators as is feasible, given the available resources. To minimize the measurement burden, priority was given to indicators that can be measured with existing standardized surveys. Whenever possible, we listed standardized indicators that have already been recommended in indicator compendia for monitoring progress in family planning and reproductive health programs (Family Planning 2020, 2015; MEASURE Evaluation, 2015; World Health Organization, 2015). Because many of the recommended indicators can be calculated using existing data, it is important to conduct rapid mapping of all existing data sources to determine which data are missing. For indicators likely to require primary data collection, priority was given to those that can be obtained at a reasonable frequency and cost.

MARKET SIZE

The total market size for family planning refers both to the volume of family planning products or services and the number of consumers in the market (Barnes, et al., 2012). A good understanding of market size is essential for making decisions about the types and volume of family planning products needed, and for understanding the extent to which the current system meets the demand for family planning (Pallin, Meekers, Longfield, & Lupu, 2013; Pallin, Meekers, Lupu, & Longfield, 2013a, 2013b; Population Services International, 2012). Table 1 shows several key indicators that reflect the total market size.

TABLE 1: SUMMARY OF KEY TMA INDICATORS FOR FAMILY PLANNING

Topic	Indicators	Data Source
Market Size Indicators		
Universe of need for family planning	The total number of each type of family planning product and service needed to meet the demand for family planning	Various
Market volume	Total number of each type of family planning product or service sold, distributed, or provided across all sectors	Program data, service statistics
Use of family planning products and services	Percentage of sexually active women currently using each type of family planning method	Population-based survey
	Percentage of sexually active women who currently use any method of contraception (contraceptive prevalence rate)	Population-based survey
	Percentage distribution of contraceptive users by family planning method (contraceptive method mix)	Population-based survey
Unmet need for family planning	Percentage of sexually active women with an unmet need for family planning	Population-based survey
	Percentage of sexually active women with an unmet need for birth spacing	Population-based survey
	Percentage of sexually active women with an unmet need for family limitation	Population-based survey
Market Accessibility Indicators		
Knowledge of source	Percentage of women of reproductive age who know at least one family planning source	Population-based survey
Access	Percentage of current users who last obtained their method from a public sector source	Population-based survey
	Percentage of current users who last obtained their method from a private provider	Population-based survey
	Percentage of nonusers who report lack of access as the reason for not using family planning	Population-based survey
	Percentage of nonusers who report cost as the reason for not using family planning	Population-based survey
	Percentage of users who would be willing to pay US\$x.x for their current method	Population-based survey
	Percentage of women of reproductive age who report living within two hours of the closest family planning source	Population-based survey
	Percentage of nonusers who report unavailability of their preferred family planning method as the reason for not using family planning	Population-based survey

Topic	Indicators	Data Source
Product stockouts/ gaps in family planning services	Percentage of delivery points that report a stockout of each family planning method in the past month	Retail audit/survey
	Percentage of providers reporting gaps in availability of each family planning service in the past month	Retail audit/survey
Market Sustainability Indicators		
Market value	Total value of all family planning products and services sold	Program data, service statistics
Market leader's market share	Percentage of total products or services sold, distributed, or provided by the market leader	Program data, service statistics
Market subsidies	Total number of unsubsidized brands available on the market for each family planning product	Retail audit/survey, key informants
	Percentage of the total market volume accounted for by unsubsidized brands for each family planning product	Program data, service statistics
	Percentage of family planning product users who report using an unsubsidized brand	Population-based survey
	Percentage of family planning service users who report using a public sector source	Population-based survey
Market Equity Indicators		
Use of family planning products/services by wealth level and other indicators of socioeconomic status	Percentage of population in each wealth level who use a family planning method	Population-based survey
	Percentages of rural and urban residents who use a family planning method	Population-based survey

Notes: Partially adapted from Barnes, et al. (2012); Gardiner, et al. (2006); Pallin & Meekers (2014); Population Services International (2012). Market equity is studied by disaggregating market indicators by socioeconomic status. All population-based indicators in Table 1 can be disaggregated by wealth level and other indicators of socioeconomic status or vulnerability. The examples shown here are illustrative.

- Universe of need for family planning

The universe of need (UON) for family planning is an estimate of the total number of family planning products needed in a calendar year to prevent all unplanned pregnancies (Population Services International, 2011, 2013). UON is calculated separately for each method, factoring in current use of family planning, unmet need, and method preference. UON for a given method is calculated using population estimates of the number of women age 15–49, the percentage of women currently using a family planning method or who have an unmet need for family planning, the method mix, and a conversion factor indicating the number of product units needed to provide a couple with one year of protection from unplanned pregnancy. UON for family planning can be used to estimate the size of the potential market for products or services and can be compared to market volume calculations to assess the extent to which the market is meeting current needs.¹

¹ Condoms are a special case because they can also be used for the prevention of HIV and other sexually transmitted infections. In many countries, the UoN for condoms for HIV is much higher than UoN for condoms for family planning (Pallin et al., 2013, 2013a, 2013b).

- Market volume

Market volume refers to the number of products and services currently on the market. It is defined as the total number of a product or service distributed or sold in a given year. Market volume can be used to assess the potential of the market (see Pallin, et al., 2013a, 2013b). It can also be compared to the universe of need to assess whether the market meets current demand. Calculating the total market volume requires data from each distribution sector (public, NGO, and commercial). For each sector, the total volume sold or distributed is needed, including the number of products distributed free of cost, sold for profit, and sold at a subsidized cost or at cost recovery levels. The total market volume equals the sum of these volumes.

Most governments report annual data on the number of family planning products distributed. The public sector often distributes family planning products for free. However, countries may ask clients to contribute a share of the cost (USAID Contraceptive Security Team, n.d.). In such cases, it is important that the government data used include the number of products distributed for free and—if applicable—any products the government sold to consumers. Distribution and sales data from NGOs are often easy to obtain. Social marketing organizations usually sell subsidized products, but they may also distribute free products or assist the government with distribution of free public-sector products. There is a risk that the number of products distributed for free may be reported by the public sector as well as by the social marketing program, leading to double counting. Distribution and sales data from small NGOs are harder to obtain, but should also be included. Sales data from for-profit companies should be obtained from the companies themselves or from a market research service. Commercial data from market research services are costly and exclude the informal market (Barnes, et al., 2012; Market Development Approaches Working Group, 2009). When these data are not available, it may be necessary to estimate commercial sales volumes based on key informant interviews and any previous market data. Import data can provide rough estimates of commercial sales but must be adjusted for products in the pipeline, such as in regional distribution centers and warehouses. Market volume calculations can be extremely time-consuming. The main reason for this is that the data needed to calculate market volume come from a wide variety of sources that often report them in different formats. Converting all the data to comparable units and periods can be laborious, and will often require obtaining additional information from the organizations that provided the data.

- Use of family planning products and services

The level of use of specific family planning products and services can be a good indicator both of method preference and demand. It is measured as the percentage of sexually active women currently using each family planning method. It allows triangulation of data from population-based surveys, service statistics, and product import data, which may identify gaps between the number of products imported or distributed and the number actually used.

The contraceptive method mix is a standard indicator that serves as a proxy for the variety of methods to which the population has access. It is defined as the percentage distribution of contraceptive users by method (MEASURE Evaluation, 2015). The finding that some methods are strongly favored may indicate either user preferences, user perceptions about what is considered affordable or accessible, or provider biases toward such methods. A broad method mix may mean that more women are able to use their preferred contraceptive method, since there is access to a wider range of methods. On a population level, method mix may also signal social bias regarding gender responsibility in family planning, or a bias towards certain methods due to religious or cultural beliefs. The length of time products or services have been available, governmental or regulatory barriers, and donor influences may also affect method mix.

The contraceptive prevalence rate (CPR) is the standard family planning indicator for measuring the level of use (Family Planning 2020, 2015; Gardiner, et al., 2006; MEASURE Evaluation, 2015; Performance Monitoring and Accountability 2020, 2015; Population Services International, 2012; World Health Organization, 2015). It refers

to the percentage of sexually active women of reproductive age using any type of contraceptive method. Occasionally, a variant of the CPR that is restricted to modern methods is reported (mCPR). However, for TMA purposes it is important also to examine use of traditional methods, as these users represent potential future consumers of modern methods. The CPR can serve as a proxy for market size as it reflects the number of consumers of family planning products and services (Barnes, et al., 2012).

Although CPR is frequently calculated only for women who are married or in a union (MEASURE Evaluation, 2015), we recommend calculating this indicator for all sexually active women ages 15–49, and subsequently disaggregating it by marital status. Calculating the CPR only for women who are married or in a union would exclude sexually active unmarried women and would therefore exclude many current or potential users. The CPR can be calculated easily using data from population-based surveys, which commonly ask sexually active respondents if they are using a family planning method.

For TMA planning purposes, it is important to have an estimate of the total unmet need, rather than just the unmet need among women who are married or in a union. Including unmarried sexually active women will result in a more accurate estimate of the total unmet need.

- The unmet need for family planning

Unmet need is a crucial component of the total potential demand for family planning. High unmet need may signal a potential for market growth. Unmet need may also point to a variety of problems, such as poor access to family planning, inability to pay for family planning services, and distribution problems. Distinguishing between the unmet need for spacing and limiting the number of children sheds light on the relative importance of reversible and permanent methods.

Unmet need is broadly defined as the percentage of women of reproductive age who are sexually active and who do not wish to become pregnant but are not using any form of contraception (ICF International, 2015; MEASURE Evaluation, 2015). The calculation does not distinguish between modern and traditional methods of contraception. Total unmet need includes women who have an unmet need for spacing births and women who have an unmet need for limiting births. The calculation must take into account that some women may be infecund, pregnant, or postpartum amenorrheic. Consequently, the calculation of unmet need is complex, using more than 15 separate survey questions. Because not all surveys include all of these questions, unmet need has not been calculated consistently (Bradley, et al., 2012). Therefore, data on levels of unmet need have not been comparable across countries or over time.

To ensure consistency and enable examination of changes in unmet need over time, it is recommended to calculate unmet need using the guidelines outlined by Demographic and Health Surveys (DHS) for the revised definition of unmet need for family planning (Bradley, et al., 2012; ICF International, 2015). For TMA planning purposes, calculation of unmet need is recommended for all women, rather than only for women who are married or in a union as is sometimes proposed, as this results in a more accurate estimate of the total unmet need.

- Unmet need for birth spacing and family limitation

Understanding the need for birth spacing and limiting childbearing may help to target segments of the population more effectively (Bradley, et al., 2012). The distinction is important, because it may indicate a need for specific types of family planning products or services. Longer-term methods may be more appropriate for women with a need for limiting, while short-term methods may suffice for women attempting to space childbearing.

MARKET ACCESSIBILITY

Access to family planning products and services depends on these factors: knowledge of a source, geographic and financial access, and the extent to which products and services are provided without interruptions.

- Knowledge of a source for family planning products or services

Increasing product use and expanding the market requires that all potential future users have the ability to access family planning products and services. Knowledge of a family planning source is a prerequisite for access. It is calculated as the percentage of women of reproductive age who know at least one source of family planning products or services (Bertrand et al., 1994). The same indicator can be calculated for men. Current DHS surveys do not ask what that family planning source is.

Although restricting the indicator to *modern* methods makes it more precise, this is not recommended, because that calculation requires a more complex set of survey questions, thereby increasing questionnaire length. The indicator would also not be comparable with the DHS results. Some survey questionnaires ask respondents to name all the types of family planning sources they know. This information can be used to calculate two additional subindicators: knowledge of a public-sector family planning source and knowledge of a private-sector family planning source. Analyzing the difference between these two subindicators may help to identify where additional marketing is needed. Differences in knowledge of public- and private-sector sources may signal where to focus marketing and distribution efforts.

- Access to family planning products and services

Information about whether current users use mostly public or private supply sources also sheds light on access. For example, public sector facilities may offer mostly short-term methods, while private sector facilities may offer both short-term and long-term methods. Because the supply sources are likely to vary by method, it is helpful to examine current supply sources separately for each type of method.

National surveys often collect data on the reasons why people are not using family planning. Potential users may lack geographic or financial access. The percentage of nonusers who report that they are not using family planning because of the cost of the method is a good proxy for financial access, while the percentage who report not using a method because they lack access or the source is too far is a good proxy for geographic access. A high percentage of nonuse due to lack of access may signal problems with distribution (high product stockouts can be another indication that there may be problems with distribution; see below). Standardized questionnaires such as the DHS often also inquire how long it would take respondents to get to a family planning source. The percentage of respondents who report living within a fixed time limit (for example, within two hours) of a family planning source is another indicator of geographic access (MEASURE Evaluation, 2015). Having limited geographic access to family planning can also increase the financial burden. Access to affordable family planning products and services is essential for improved product use. Those who cannot afford to pay typically need access to free products. If cost is a common reason for nonuse, improved targeting of public sector products may be needed. Conversely, if cost is not a common reason for nonuse, then it may be possible to increase the price of socially marketed products. Although rarely included in standardized questionnaires, data on willingness to pay can provide helpful insights about financial access. Ideally, such questions would be included in the model questionnaires of future standardized surveys and in ad hoc surveys that are being planned.

Having both geographic and financial access to family planning does not necessarily imply that women have access to the method they prefer. Hence, it may be helpful to calculate the percentage of nonusers who report not using family planning because their preferred method is not available. However, there may be other impediments that prevent people from using their preferred method.

- Product stockouts and gaps in family planning services

Product stockouts and gaps in services (such as due to a lack of trained personnel) can hamper access to family planning. Such problems can be measured by simple indicators, such as the percentage of delivery points that reported a stockout of each specific family planning product in the past month and the percentage of providers who reported gaps in the availability of specific family planning services (Barnes, et al., 2012; MEASURE Evaluation, 2015; Reproductive Health Supplies Coalition, 2015). Data on stockouts of family planning products and gaps in service availability can be gathered from a survey of retail outlets and service providers. We suggest limiting the reference period to one month, because this will minimize recall error in retail surveys and is less time-consuming in case the data are obtained by verifying stock records.

For methods that require a clinical service in addition to a product (such as insertion of an intrauterine device (IUD)), method availability can be affected not only by a stockout but also by gaps in the service itself (like the unavailability of a qualified clinician to perform the IUD insertion). A survey of family planning providers can be used to measure the percentage of family planning service delivery points that report a gap in family planning services in a given period.

MARKET SUSTAINABILITY

Because TMA seeks to transform the market into a self-sustaining entity, indicators of market sustainability are important for any TMA analysis. Three groups of indicators are particularly relevant:

- Market value of family planning products and services

Market value reflects willingness to pay for family planning products and may stimulate commercial interest. Market value refers to the total U.S. dollar amount of the product or service sold in the last year, measured for each family planning product or service. It is calculated by multiplying the market volume for each method by the average retail price of each product or service. Because the aim is to assess the commercial potential, free products and services do not contribute to market value (Population Services International, 2012).² Because a high market value may encourage commercial interest in the market, it is also an important indicator of market sustainability.

Accurate market value calculations require detailed market volume and price data. Ideally, market volume data for family planning products should be given by brand, brand extension, and where applicable, the number of products in each package (for example, three-packs of Lovers Plus Studded condoms). For family planning methods that include service delivery, such as injectables, IUDs, or sterilization, data should be separated into the cost of the product or device, and the cost of the clinical service. If necessary, import or shipping data can be used as a rough proxy, but it will not reflect the number of products or services that were actually distributed to users and will likely overestimate market volume. The average price of each brand, brand extension, and clinic service can be obtained using retail audits or distribution surveys. For the most accurate estimates, average prices at the time of the audit or survey should be calculated for each brand extension and package size. If brand-specific pricing data cannot be obtained, the average price of each specific family planning product (such as the average price of a cycle of oral contraceptives) can be used as a rough estimate of market value. Tools like the United Nations Population Fund (UNFPA) Contraceptive Price Indicator provide average prices of family planning products procured through the principal donor-funded procurement platforms, but do not include testing, insurance or shipping costs, nor commercial markups. Because product prices often differ significantly by country, brand, brand extension, and market (Pallin, et al., 2013, 2013a, 2013b), we recommend using data from retail surveys and for clinical services from facility surveys.

² In theory, it is possible to estimate the value of products and services that are provided free of charge. However, such estimates would not be a useful indicator of the market potential, given that how many users would be willing to pay for products or how much they would be willing to pay are unknown.

- Market share held by the market leader

The extent to which the market is dominated by one brand or player can be assessed by a variety of indicators, including the number of unsubsidized brands available on the market and the market share of the market leader. These measures can indicate whether there is healthy market competition. The market leader's market share is calculated using market volume data. The same supplier may distribute multiple brands and brand extensions. Heavy reliance on a single supply source can cause many problems. First, if the market is dominated by a supply source that is dependent on government or donor subsidies, an end in funding could result in widespread decline in access to the family planning product. Additionally, problems with quality or other supply-side issues could have a large impact on product availability, potentially leaving many current and future users without access. Finally, market dominance inhibits commercial sector participation, which is crucial to long-term sustainability. When the market leader accounts for more than 30–40 percent of the market and distributes subsidized products, implementation should focus on shifting users to commercial products (Barnes, et al., 2012).

- Market subsidies

The level of subsidization of family planning products is important to gauge sustainability. This can be difficult to measure because the full cost of a product or service includes not only the cost of production, but also the cost of marketing, distribution, clinic operations, and other costs. However, some relatively simple and useful indicators can help measure the extent of market subsidies, including:

- The number of unsubsidized brands available on the market
- The market share of unsubsidized brands
- The use of unsubsidized family planning products and services

The number of unsubsidized brands available on the market refers both to the number of current brands and brand extensions available to consumers. Brand extensions are a key component of this measure, as an increase in brand extensions indicates growth of existing unsubsidized brands. Only unsubsidized brands should be counted, as subsidized brands do not indicate market sustainability (Barnes, et al., 2012). The calculation of the number of unsubsidized brands should include commercial brands sold for profit as well as brands sold by NGOs at full cost recovery (Barnes, et al., 2012; Pallin, et al., 2013, 2013a, 2013b), but not brands sold at partial subsidy. For clinical services, the number of unsubsidized brands may not be a relevant measure.

The number of unsubsidized brands can be used to calculate the percentage of unsubsidized brands on the market. A market dominated by subsidized brands may discourage market growth and sustainability by inhibiting participation of the commercial sector. An increase in the number or percentage of unsubsidized brands over time may reflect the commercial sector's burgeoning role in the market, as well as the consumers' willingness to pay for family planning products.

Another way to look at subsidy levels is to examine the percentage of family planning users who rely on unsubsidized family planning products or services. The DHS surveys ask oral contraceptive users and condom users to specify the brand name of the pill or condoms they are using. Because unsubsidized public sector products are typically unbranded, it is possible to calculate the percentage of users who use an unsubsidized brand, who use a partially subsidized brand, and who use a subsidized brand. The DHS surveys do not collect brand information for other family planning products, but this could be collected in ad hoc surveys. Users of family planning services (such as sterilization or IUD insertion) are typically asked to identify the type of source where they received the service. Hence, it is possible to calculate the percentage of users of each family planning service who used a public sector source. However, normally it is not possible to distinguish between users of commercial sources and partially subsidized (social marketing) sources.

MARKET EQUITY

Improving market equity in family planning access and use is a core part of TMA. Market equity typically refers to differences in access and use by socioeconomic status. Understanding market equity requires disaggregating market indicators by socioeconomic status. Most commonly, socioeconomic status is measured through a range of proxy indicators, such as wealth quintiles, rural-urban residence, etc. Hence, equity can be examined for all population-based indicators described above. For example, equity in use of family planning methods can be examined by disaggregating the CPR by various stratification variables, such as wealth level or rural/urban residence. Because analyzing market equity is done by disaggregating basic market indicators, there is no need to calculate any new indicators of market equity. The disaggregation of the market indicator by wealth level (or other factors) is the equivalent of creating a separate indicator for each wealth level. By comparing the results for different socioeconomic segments (for example, wealth levels or rural/urban residence), it is possible to assess whether access to family planning methods is equitable, and to identify subgroups where family planning services should be targeted.



Tools³

Tool 1: Data source mapping

Tool 15: Indicator reference sheets

³ These tools are in the *Handbook for Research on the Family Planning Market* (Meekers, et al., 2016b).

3. DATA SOURCES

Developing an evidence-based total market approach requires data from a variety of sources, such as population-based surveys, retail audits, service statistics and/or computerized logistics management information system (CLMIS), and qualitative research, such as key informant interviews. Population-based surveys can provide detailed information about access to family planning products and services, use of such products and services, and equity in use. Such surveys can also provide information on willingness to pay and use of specific brands of family planning products. Data on brand use can be used to estimate market share and market subsidies. Program and service statistics provide information about the volume of family planning products on the market, the value of the family planning market, market share, and subsidies. CLMIS data can provide information on stocks of family planning products available in the system, the rate of consumption of family planning products, and losses and adjustments of family planning commodities (DELIVER, 2006). Retail or distribution surveys can provide data on the different types of family planning products on the market, the number of brands, the number of unsubsidized brands, and the prevalence of stockouts by type of outlet (Andreasen, 1988; Richter & Meekers, 2000). Data collected to develop a TMA also serve as a baseline for measuring improvements over time.

Before embarking on expensive primary data collection, first engage in a data source mapping exercise. Data source mapping is a simple, low-cost way to catalogue useful existing secondary data, and to identify which specific data are not available and might warrant primary data collection.

Some data that are needed to develop a TMA plan may exist (secondary data), while other data may not exist or may be inaccessible and need to be collected (primary data). Before embarking on expensive primary data collection, it is recommended first to engage in a data source mapping exercise (World Health Organization, 2013). Data source mapping is a simple, low-cost way to catalogue existing secondary data and identify the specific information they contain. Data source mapping will help identify which data must be obtained through primary data collection and whether investing in primary data collection is warranted. The desk study conducted as part of the landscaping exercise (Brady, et al., 2016) will likely have identified the main secondary data sources that are available, such as the DHS or Multiple Indicator Cluster Surveys. Although published survey reports usually contain useful information about family planning, much more detailed information often can be obtained by mining the raw data.

WHICH SECONDARY DATA SOURCES CAN WE USE?

Most developing countries have existing survey data on family planning. The two largest survey programs are the USAID-funded DHS (www.dhsprogram.com) and the United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys (MICS, <http://mics.unicef.org/about>), both of which collect health data about a nationally representative sample of women and men to inform policies and programs, as well as for use in monitoring and evaluation. Both DHS and MICS surveys are implemented at regular intervals (every three to five years).

Some countries may have data from the Performance Monitoring and Accountability 2020 (PMA2020) surveys (<http://pma2020.org>), which were originally designed for progress reporting for Family Planning 2020 (FP2020, www.familyplanning2020.org). PMA2020 surveys are designed to collect annual data from a nationally representative sample of households to calculate key family planning indicators, including the CPR and unmet need for family planning. However, several PMA2020 surveys are not nationally representative and their results may not be consistent with those of other surveys.

Many large family planning NGOs also conduct (or commission) nationally representative surveys to inform and evaluate their programs. Such surveys often contain valuable information about the family planning market, but the raw data can be difficult to obtain. The donors who fund such surveys can play an important role in ensuring public access to such data. Because the content and quality of NGO surveys vary greatly, their usefulness needs to be assessed on a case-by-case basis. Therefore, we limit our discussion here to the DHS and MICS surveys.

Both the DHS and MICS survey programs are designed to provide comparable data on key health indicators, including family planning. The questionnaires used for individual countries are based on standardized model questionnaires that are used with only minor adaptations or additions. However, to reflect changing information needs and priorities, the questionnaires are updated from time to time. Therefore, the specific type of family planning data that are being collected may vary over time, which may affect analyses of trends in the family planning market. The DHS core questionnaires are updated every five years. MICS surveys are currently updated every three years. The family planning information in MICS surveys tends to focus on current method use and unmet need, while the DHS surveys tend to collect information about a much wider range of family planning topics. The key TMA indicators that can be obtained from current DHS and MICS surveys are listed in Table 2.

WHICH PRIMARY DATA NEED TO BE COLLECTED?

In most cases, secondary data alone will not be sufficient to inform a TMA plan, either because the data are dated, or because important information is missing. Collecting primary data may involve a combination of service statistics, survey data, retail/distribution audits or surveys, and qualitative studies such as key informant interviews

Survey data

Survey data can be collected by commissioning a new ad hoc population-based survey, by piggybacking onto another scheduled survey, or by participating in an omnibus survey (Berg & Meekers, 2005). If resources permit, the best option would be to commission a population-based survey. Ad hoc population-based surveys are expensive, but much of the cost stems from the need to have a representative sample and the associated travel expenses. Because the length of the questionnaire has relatively little influence on the total survey cost, it is recommended that any ad hoc surveys collect all the needed TMA data, rather than only the TMA data that could not be obtained from secondary sources. This will ensure that all survey-based indicators are current and that they are calculated on the basis of the same group of respondents (which increases their comparability). It has the added advantage that some of the data can be triangulated with secondary data sources.

Another option is to add a limited number of questions to a survey that has already been scheduled, such as an upcoming survey by a large NGO, or even a DHS. Piggybacking on another survey is cost-effective. However, there are few piggybacking opportunities because population-based surveys are conducted infrequently and because their timing may not be right. Because questionnaire development is a lengthy process, negotiations to add questions should occur at least one year before the implementation of the survey. Requests to add questions to a scheduled survey are likely to meet resistance for several reasons. Often the questionnaires are already lengthy, and adding questions raises concerns that the interviews will be too long, which could reduce data quality or increase nonresponse. Adding questions will also alter the numbering of the questions and may affect the skip patterns, which are tedious to correct. While there is precedence for adding two or three questions to a survey, efforts to add more than that are unlikely to succeed.

A third option for obtaining survey data is to participate in an omnibus survey. Omnibus surveys are marketing surveys that collect data on a wide range of topics. Typically, such surveys are implemented by a marketing research company. The implementing organization typically draws the sample and collects limited information

about the background characteristics of the respondents. Interested parties (such as commercial companies and NGOs) purchase additional questions, usually at a fixed cost per question. Organizations that purchase questions will only receive data for the questions they purchased, in addition to the background information collected by the implementing organization.

Omnibus surveys are often conducted at very short intervals (sometimes bimonthly), which makes them ideal for assessing trends in the family planning market. They tend to have large sample sizes and are inexpensive. Their main disadvantages are that the sample may not be nationally representative, they may not use rigorous sampling methods, and there may be only limited quality control measures, such as supervision of the interviewers.

Omnibus surveys may exclude sparsely populated areas or smaller rural localities. Some omnibus surveys use the same target sample size for each geographic area irrespective of the population size, which implies that areas with a large population are under-sampled, resulting in a sample that is not representative of the total population. These factors limit the extent to which the results can be generalized or compared with other surveys. Some of these weaknesses can be addressed. For example, information about the sampling procedures may make it possible to weight the data to correct for the oversampling of some areas. Likewise, it may be possible to increase quality control, by providing additional research staff to assist with the interviewer training and supervision. Before participating in an omnibus survey, it is advised to carefully review the sampling plan, as well as the quality control mechanism in place.

Because collecting survey data involves human subjects, approval by an institutional review board (IRB) will be required at the institutional level and the country level (see Brady, et al., 2016, and Meekers, et al., 2016). Because regulations vary across organizations, it is important to verify the details about the relevant IRB regulations. Data collection is prohibited until the IRB either has formally declared the study exempt or has approved it.

Program data and service statistics

Program data and service statistics are typically routinely collected through management information systems (MIS) of implementing organizations, which is fast and cost-effective. Data routinely collected by the public sector, nonprofit private sector, and commercial sector usually suffice to provide information about market volume, market value, market share, and subsidies. Unfortunately, the data may not be shared across sectors. Commercial sector data are particularly difficult to get, because they are considered proprietary. Another problem is that data collection has not been standardized across sectors. For example, sometimes sales volumes are reported by calendar year, while in other cases they are reported by fiscal year. The actual measurement may also differ. For example, the public sector may track the number of product units they imported or produced, social marketing programs may report the number of units sold to distributors (sales to the trade), and the commercial sector may track retail sales. Because TMA analysis requires the pooling of data, there is a need to standardize data collection for key indicators, as has been done in other health fields.

Data sharing should be encouraged, by illustrating that evidence-based TMA plans will benefit all three sectors. Using a participatory approach to analyze data, share opinions, and inform decisions can show representatives from all sectors the benefits of sharing data (USAID DELIVER Project, 2014). In the long term, establishing a data repository that gathers data from all three sectors is recommended.

Retail audit and distribution surveys

Additional market information can be obtained through a survey of retail outlets, which can take the form of either retail audits or product distribution surveys (Andreasen, 1988; Richter & Meekers, 2000). Retail audits aim to track retail sales and examine sales trends. By contrast, product distribution surveys aim to measure current availability of different products and brands (market penetration) and to identify potential distribution problems.

Both methods use a random sample of retail outlets to obtain data on sales, product inventory, stockouts, and retail prices for different brands. They are valuable tools for measuring trends in market share of different brands and in total market volume, which can help show whether increased use or subsidized and free products is growing the total market or more merely reflecting that consumers are switching from commercial products to fully or partially subsidized products. Retail audits and distribution surveys both provide data on the distribution coverage of different brands and on the use of point-of-sale promotional materials. However, retail audits and distribution surveys differ in how they measure retail sales and inventories.

Because retailers may not keep accurate records of their sales, retail audits estimate sales by tracking changes in retail inventories and collecting information on products the retailer purchased. This is done either through weekly or daily inventory audits, in which the relevant family planning products are inventoried at the beginning and end of the period, and the retailer is asked to keep written records of any purchases made during that period. One of the strengths of the retail audit approach is that it is likely that retailers are able to fairly accurately recall their purchases over a 24-hour or seven-day period; the drawback is that each sampled retail outlet must be visited and inventoried twice.

Product distribution surveys obtain data through short face-to-face interviews with retailers. The questionnaire solicits information about a range of topics, including the retailer's awareness of different brands and of advertisements for different brands. Retailers are asked to estimate weekly sales of each brand or to provide sales records. The questionnaire typically asks about the different brands sold at the outlet, whether they are in stock, the quantity in stock, and the retail price. Interviewers record which promotional materials for the different brands are displayed at the outlet. Because distribution surveys require only a single visit to each outlet, they are less disruptive to the retailers and more cost-effective. However, the drawback is that the estimate of retail sales may be less accurate than those obtained from before-after retail audits.

To generalize the results either from retail audits or distribution surveys, they must be based on a representative sample of outlets. This usually requires a stratified sample based on an up-to-date sampling frame, which can be expensive. The sample size must be sufficiently large to allow estimates at the desired level. Obtaining estimates for specific regions requires a larger sample size, which increases the cost. Since data on retail sales and market trends are valuable to organizations in all three sectors, it may be possible to share the cost across organizations (Andreasen, 1988).

HOW DO WE DESIGN THE SURVEY INSTRUMENTS?

Secondary data sources can provide much of the information needed to develop a TMA plan but may not include data to calculate all the recommended indicators. They may also be too dated to provide an accurate picture of the current family planning market. Hence, ad hoc household and/or retail surveys may be needed.

It is very important that ad hoc surveys collect information to measure all recommended TMA indicators, rather than only those not available in secondary data sources. This ensures that all indicators refer to the exact same period and study population. Information on background characteristics needed to segment the market is also needed. If resources permit, household survey questionnaires may include a contraceptive history, which will enable examination of method discontinuation and switching and the reasons for it. Household surveys can be used to measure exposure to family planning messages and brand advertising, while retail surveys can collect data on point-of-purchase promotional materials, for example. Because TMA planning requires examining trends in the family planning market, information collected in ad hoc surveys must be comparable with secondary data. To ensure comparability, survey questions should be phrased in the exact same way as those of secondary data sources. Model questionnaires are available in the *Handbook for Research on the Family Planning Market* (Meekers, et al., 2016).

The data collected to design the TMA plan should be used as a baseline to subsequently measure the impact of the TMA strategy. Therefore, the questionnaires need to collect information on confounding factors that may affect the outcome, such as fertility preferences or exposure to family planning messages. Having a longer questionnaire has little impact on the cost, as the total survey cost depends largely on the sample size, travel costs, etc.



Tools for primary data collection

Tool 1: Data source mapping

Tool 11: Obtaining IRB approval for a study

Tool 12: Sampling strategies

Tool 13: Model TMA household survey questionnaire

Tool 14: Model TMA retail audit/survey questionnaire

TABLE 2: KEY TMA INDICATORS AVAILABLE FROM CURRENT DHS/MICS DATA

Topic	Indicators	DHS	MICS
Use of family planning products and services	Percentage of sexually active women currently using each type of family planning method	√	√
	Percentage of sexually active women who currently use any method of contraception (contraceptive prevalence rate (CPR))	√	√
	Percentage distribution of contraceptive users by family planning method (contraceptive method mix)	√	√
Unmet need for family planning	Percentage of sexually active women with an unmet need for family planning	√	√
	Percentage of sexually active women with an unmet need for birth spacing	√	√
	Percentage of sexually active women with an unmet need for family limitation	√	√
Knowledge of source	Percentage of women of reproductive age who know at least one family planning source	√	-
Access	Percentage of current users who last obtained their method from a public sector source	√	-
	Percentage of current users who last obtained their method from a private provider	√	-
	Percentage of nonusers who report lack of access as the reason for not using family planning	√	-
	Percentage of nonusers who report cost as the reason for not using family planning	√	-
	Percentage of users who would be willing to pay US\$x.x for their current method	√	-
	Percentage of women of reproductive age who report living within two hours of the closest family planning source	√	-
	Percentage of nonusers who report unavailability of their preferred family planning method as the reason for not using family planning	√	-

Notes: This table refers to the female questionnaire for the 2013–2018 DHS and 2013–2015 MICS. Market equity is studied by disaggregating population-based indicators by wealth level and other indicators of socioeconomic status or vulnerability.

4. ANALYZING PATTERNS AND TRENDS IN KEY TMA INDICATORS

Implementing TMA often involves modifying existing programs to work together more effectively, rather than creating new programs. To achieve this, each supply sector needs information about the family planning market (Barnes, et al., 2012; Pallin & Meekers, 2014). Key TMA indicators must be analyzed and presented in a manner that highlights how coordination between the sectors can be improved. Most analyses will involve:

- Describing the profile of different types of family planning users, including users of different family planning products or services
- Estimating the demand for family planning, and how this demand varies across subgroups and supply sectors
- Assessing trends in the family planning market and identifying opportunities for the market to grow

All data analyses require two types of data: (1) the key TMA indicators and (2) stratification variables that measure various dimensions of inequality in access to and use of family planning (such as wealth, education, and rural/urban residence) as well as differences in need (for example, fertility levels and fertility preferences). These stratification variables may be used to develop a profile of the consumers from each sector and to identify inequities in access to and use of family planning. The stratification variables also help identify important family planning consumer segments, so that each supply sector can tailor their distribution, pricing, and promotional strategies to those consumer segments where they have the largest comparative advantage.

WHAT DO WE NEED FOR STRATIFICATION AND MARKET SEGMENTATION?

Identifying distinct consumer segments that can be targeted with different marketing strategies is done through the process of market segmentation. Market segmentation divides a large and heterogeneous market into smaller homogenous markets (Briscombe, 2011; Chakraborty, Firestone & Bellows, 2013; Fahnestock, 2008; Fry, Firestone & Chakraborty, 2014; Market Development Approaches Working Group, 2009; World Health Organization, 2013). Dividing the market is done by identifying appropriate bases of segmentation (Chapman, et al., 2006), which consist of socioeconomic, cultural, and behavioral factors, and consumer preferences. For a segmentation base to be appropriate, it must be possible to identify and reach the segment; the segment must be actionable (i.e., an intervention can be designed to affect the segment) and potentially responsive to the intervention. The segment should be substantial in size and fairly stable over the course of the strategy. The choice of appropriate segmentation bases may vary according to the family planning method, the target audience, and other factors.

Traditionally, segmentation analyses emphasized the ability and willingness to pay for products and services. However, this can result in recommendations that do not reflect consumer preferences and that suppliers cannot deliver at good value for money (Chapman, et al., 2006). Hence, a wider range of segmentation bases may be needed, including age, sex, marital status, parity, education, socioeconomic status, and residence type. Such segmentation bases are used on the assumption that consumer preferences differ along these variables. Psychological and attitudinal variables, such as attitudes toward family planning, perceptions about the safety, side effects, and effectiveness of family planning methods and fertility preferences can also be important segmentation bases. Similarly, behavioral variables such as past and current use of family planning methods, intention to use family planning in the future, and sources of supply of family planning methods (i.e., public, NGO, or commercial sector) can be helpful segmentation variables.

The specific segmentation variables to be examined will vary from case to case, depending on the specific study objectives and the availability of funding to collect additional data. Collecting primary data allows the most rigorous analysis of the family planning market, but a lot can be learned from secondary data (Fahnestock, 2008). At a minimum, a standard DHS survey will allow examination of variables such as age, level of education, rural/urban residence, wealth status, marital status, parity, fertility preference, and current and past contraceptive use. A DHS will also have information on the source of supply for current users, classified into public sector, private medical sector, and other sources. The calculation of most of these variables is straightforward, except for wealth status. Wealth status needs to be measured using a composite indicator, based on data about household possessions and amenities. Several different wealth indicators, all of which require complex calculations, have been used in the literature. The most common ones are discussed in the next section.

HOW CAN WE MEASURE WEALTH LEVELS?

Because generating equity in access to and use of family planning is a key objective of any TMA plan, data analyses should be disaggregated by wealth status whenever feasible. In developing countries, household income is difficult to measure for several reasons (Rutstein & Johnson, 2004, pp. 2–3). For example, people may not know their exact annual income; income levels may vary on a daily, weekly, or seasonal basis; and household members may not share their income with other household members. Therefore, measuring household income would require lengthy interviews with all household members who could potentially earn income, which is not feasible. Because household wealth is unobserved, we can look for variables that are associated with a household's relative economic status.

Standardized health surveys such as the DHS and MICS include questions about amenities and possessions in the respondents' households. Similar questions can be included in ad hoc surveys that are planned. The standard questions have this format: "Does any member of your household own... a watch, bicycle, motorcycle or scooter, an animal-drawn cart, a car or truck, a boat with motor?" and "Does your household have... electricity, a radio, a television, a mobile telephone, a non-mobile telephone, a refrigerator?" Respondents are also asked about the main source of drinking water, type of toilet facility, and so forth. Interviewer observations are used to collect information about the main type of material used for the building's walls, roof, and floor. These questions can be used to develop composite indicators of household wealth. Wealth indicators can be classified in two groups: those that measure absolute wealth levels and those that measure relative wealth levels.

Measures of absolute wealth aim to distinguish between the haves and have-nots. Using data on the available amenities and possessions, survey respondents are classified into three or four groups ranging from those who have little or nothing to those who have most everything. Thus, in a poor country such as the Central African Republic, a large fraction of the population may fall into the group of "have-nots." A much wealthier country, such as South Africa, is likely to have a much smaller percentage of "have-nots." In many respects, measures of absolute wealth are very suitable for TMA analyses, because they are good at identifying respondents who cannot afford family planning (and who should be targeted by the public sector) and those who have the ability to pay the full cost of family planning products.

Measures of relative wealth typically rank survey respondents according to a national percentile distribution of household economic status, and then classify them into groups. For example, a measure may classify respondents into wealth quintiles and label the 20 percent of respondents who have the lowest score on the wealth index as "poorest," the next 20 percent as "poor," and so on. This approach is useful for assessing the reach of public health programs among the poorest groups.

The DHS Wealth Index

The DHS Wealth Index is a widely used indicator of relative wealth (Briscombe, 2011; Rutstein & Johnson, 2004). It is based on household ownership of a series of assets and access to various amenities and services. A statistical procedure is used to assign weights to these assets, amenities, and services, and to generate a summary wealth score for each household. Households are then ranked based on their wealth score and grouped into quintiles, where the 20 percent of the lowest scores comprise the poorest quintile, and so forth. All recent DHS and MICS datasets include the Wealth Index, and it can be calculated for any nationally representative survey that collected the required information about household assets and the number of de jure household members (Rutstein, 2015).

Despite its popularity, the DHS Wealth Index has important weaknesses. Measures of relative wealth do not provide information about the size of different wealth groups. By definition, one out of five respondents is classified as “poorest,” one out of five as “poor,” and so on. Thus, changes in a country’s economic situation will not be observed in the DHS Wealth Index. More important, the DHS Wealth Index is designed to compare wealth levels only within a specific survey. It is not comparable across countries or across different survey years (Rutstein & Staveteig, 2014; Smits & Steendijk, 2015). The wealth index identifies the “poorest,” by checking how each individual ranks compared to others in the same population. Comparing health indicators across survey years for a specific wealth quintile (say, the poorest 20 percent) can give misleading results because the absolute wealth of respondents in that quintile can change over time. Hence, such comparisons should be avoided with the DHS Wealth Index.

The DHS Wealth Index, like other indices of relative wealth, is not comparable across countries or across different survey waves. Respondents in the poorest wealth quintile in one survey may be better or worse off than respondents in the same wealth quintile in a different survey. Therefore, it is recommended that analyses of trends in family planning indicators for specific wealth groups use the International Wealth Index rather than wealth quintiles.

The International Wealth Index

Recently, there have been efforts to develop wealth indices that are comparable across countries and over time, such as the International Wealth Index (IWI) (Global Data Lab, 2015; Smits & Steendijk, 2015). The IWI is an asset-based index that measures the level of material well-being based on 12 indicators of a household’s ownership of durable goods, access to basic services, and housing unit characteristics. The IWI uses the same rating criteria irrespective of the country or survey year, which makes it suitable for comparisons across countries and over time. The Global Data Lab has IWI data files available that can be added to existing DHS and MICS datasets (<http://globaldatalab.org/iwi/>). For other surveys, the IWI can be calculated using statistical software such as SPSS or STATA. The Global Data Lab provides an SPSS macro to calculate the IWI that can be adapted for each survey. The IWI is easily reproduced for any survey that includes the 12 required asset variables.

WHAT SHOULD THE ANALYSES FOCUS ON?

The specific data analyses needed to inform a TMA plan depend on the available data. Some indicators can only be calculated at the national level. For example, it may not be possible to examine regional differences in market volume or in the market share of unsubsidized brands. For such indicators, the analysis is usually limited to a bar chart showing trends in the indicators. Only in rare cases will there be sufficient existing data to calculate all the

TMA indicators listed in Table 1. However, much information can be obtained from detailed analyses of existing secondary data (Fahnestock, 2008).

One of the most basic types of analyses of the family planning market is done by providing a thorough description of the profile of family planning users. The profile of consumers is likely to vary from one contraceptive method to another. Also, some contraceptive methods may not be provided by all sectors. For example, social marketing programs may focus on condoms and oral contraceptives and may not distribute other methods. This implies that in addition to developing a profile of family planning users, it is important also to examine the profile of the users of each specific method, data permitting. The data needed to develop profiles of family planning users typically come from household surveys. Household surveys typically have a large enough sample size to develop separate profiles for users of popular family planning methods, such as oral contraceptives and condoms, but not for less popular methods such as the female condom.

To facilitate more effective collaboration between the sectors, TMA analyses should examine the profiles of consumers for each sector, as these can show whether each sector is reaching its intended target group. For example, the public sector typically targets vulnerable groups and consumers who are unable to afford socially marketed or commercial family planning products. Consumer profiles can show whether the public sector is serving people who are well-to-do, thereby undercutting the commercial sector. DHS surveys ask women from which source they last obtained their family planning method, which can help identify which supply sector they used. Family planning sources are typically classified as public sector sources (government hospital, government health center, family planning clinic, mobile clinic, fieldworker, and other public sector), private medical sector sources (private hospital/clinic, pharmacy, private doctor, mobile clinic, NGO, fieldworker, and other private medical sector source), and other sources (shops, churches, friends/relatives, and other). Hence, we can distinguish public sector users from private sector users. However, this information is insufficient to distinguish users of NGO sources (including social marketing) from commercial sector users. Recent DHS surveys do ask users of oral contraceptives and condoms what brand they are using, which can help distinguish between users of socially marketed and commercial brands. Despite inaccuracies in these data (such as because respondents may not recall the brand name), brand data enable a rough classification of users by supply sector.

Demand for family planning products can be estimated by examining the percentage of current product users. DHS data will enable estimating the total demand for modern family planning, as well as the demand for specific methods. It is also possible to obtain separate estimates of the demand for public sector and private sector products. Depending on the availability of data on use of specific brands of oral contraceptives and condoms, separate estimates of the demand for each of the three supply sectors can be calculated. Data on intention to use family planning in the future can be used to get a rough estimate of the potential growth of the total family planning market. More detailed information about the growth potential of the family planning market can be obtained by examining trends in the demand for different family planning products (which requires merging data from different DHS waves). For women who are not currently using contraceptives and who either do not want another child soon or want no more children, the DHS surveys also asked the reason for not using family planning, which may identify market opportunities. If many women are not using family planning because the cost is too high, then there will be few opportunities for the commercial market to expand. However, if they are not using family planning due to a lack of access (too far; no methods available; preferred method not available), then it is likely that the commercial sector can help fill that void.

To better understand the market, it is essential to conduct detailed analyses of various dimensions of inequality in access to and use of family planning (including wealth, education, and rural/urban residence) as well as differences in need (such as fertility levels and fertility preferences).

HOW CAN WE ESTIMATE THE NUMBER OF FAMILY PLANNING USERS?

The actual number of family planning users (or the number who obtain their method from each supply sector) can be estimated based on prevalence data from sample surveys. One option is to apply survey estimates of the prevalence to the relevant population size, such as the number of women of reproductive age (see, for example Karim, et al. 2007). However, when the prevalence data are obtained from a probability sample, statistical computer programs can get more accurate estimates of the total number of users by taking the probability of selection into account. This approach has the advantage that it can estimate the number of contraceptive users for different subpopulations, for example, by region. For health surveys that use a two-stage stratified random sampling procedure, such as the DHS and MICS surveys, obtaining accurate estimates of the total number of users requires a computer program that can handle stratified sampling, such as STATA's *svy* procedures or the SPSS Complex Samples module.



Tools

Tool 2: SPSS syntax to calculate the DHS Wealth Index

Tool 3: Instructions for adding an International Wealth Index data set to an existing DHS data set

Tool 4: Coefficients for calculating the International Wealth Index (IWI)

Tool 5: SPSS syntax to calculate the International Wealth Index (IWI)

Tool 9: Merging data sets from different survey waves

Tool 8: Using survey data to estimate the number of contraceptive users

5. ASSESSING THE CAPACITY FOR GOVERNMENT STEWARDSHIP OF THE TMA PROCESS

To increase the likelihood that a TMA will be successful, it is important to ensure that there is an entity that is both willing and able to lead the effort to leverage the comparative advantage of the three sectors that provide family planning services. Leading and coordinating a strategy among the different sectors is referred to as “stewardship” (Abt Associates, 2015a; Brady et al., 2016). Although various development organizations and individuals may serve as TMA “champions” who can play an important role in generating interest in TMA planning, it may be desirable for the government to take responsibility for moving the TMA process forward. Government stewardship with respect to a TMA is likely to involve responsibilities and capacity in three distinct areas:

- Policy and dialogue to engage all three family planning sectors
- Regulation of the quality of family planning and reproductive health supplies
- Data collection and analysis of TMA indicators

It is expected that the entity that takes on the stewardship function will provide vision and guidance for the TMA process, engage the three sectors of family planning providers to strive for common goals, and help coordinate multisectoral interaction to ensure that the desired family planning results are achieved. However, the extent to which a government is willing and able to assume an active stewardship role is likely to vary across countries. In the event that an entity other than the government takes on the stewardship function, the government will continue to be responsible for the regulation of the quality of family planning and reproductive health supplies and services, as the government always has the responsibility to protect consumers against substandard products and services.

THE TOTAL MARKET APPROACH STEWARDSHIP CAPACITY TOOL (TMASCT)

To ensure that it is feasible to implement a TMA, Abt Associates has developed a tool to assess the capacity of a government to steward the TMA process (Abt Associates, 2015a, 2015b, 2015c). The Total Market Approach Stewardship Capacity Tool (TMASCT) was designed to assess the stewardship capacity of a single government agency. If some of the stewardship responsibilities are performed by a separate agency (such as enforcement of product registration or quality standards), then the tool can be adapted accordingly. Although the tool is designed to assess the stewardship capacity of a government agency, it can be adapted to measure the stewardship capacity of a different entity (for example, the local office of a multinational agency, such as UNFPA).

The tool consists of (1) a questionnaire that measures capacity in key components of the three main stewardship responsibilities (policy and dialogue; regulation; data collection and analysis), (2) an Excel workbook that calculates indicator scores, and (3) a report template (included in the Annex of Abt Associates, 2015a).

The questionnaire addresses components of the three main areas of stewardship capacity. As shown in Table 3, the questionnaire assesses 15 components of the capacity to steward the TMA process, consisting of six aspects of the policy and dialogue to engage the three family planning sectors, three aspects of regulation of the quality of family planning supplies, and six components of the capacity to collect and analyze TMA indicators. For the complete questionnaire, see Abt Associates (2015b).

TABLE 3: MAIN AREAS OF STEWARDSHIP RESPONSIBILITY AND THEIR COMPONENTS

Main Areas of Stewardship Responsibility		
1. Policy and Dialogue	2. Regulation	3. Data Collection and Analysis
Mandate	Regulation	Data collection
Sufficient funding sources	Sufficient funding sources	Data analysis
Recognized need	Legal framework	Data management
Dialogue		Data quality
Monitoring and Evaluation		Data dissemination
Human Resources		Data use

Source: Abt Associates (2015a, p. 2).

HOW IS STEWARDSHIP CAPACITY MEASURED?

Each of the fifteen components of stewardship capacity is measured using at least one indicator. Each indicator is based on specific measurement criteria listed in the questionnaire (see Abt Associates, 2015b). All criteria are scored as met or unmet. Each aspect of stewardship capacity is considered to exist only when all criteria for the relevant indicator have been met. The tool does not provide a specific cutoff score to indicate whether the government agency examined has the capacity to manage a TMA. Rather, the tool examines the capacity of the entity to fulfill fundamental tasks that are needed for a TMA. As such, the tool helps identify specific areas where capacity may need to be strengthened.

HOW IS THE STEWARDSHIP CAPACITY ASSESSMENT IMPLEMENTED?

Implementation of the tool involves the following steps:

1. The evaluator responsible for assessing the capacity of the government to steward a TMA for family planning first conducts a preliminary review of government agencies involved in family planning commodity supplies and identifies a single government agency that is best suited to steward a TMA for family planning (Abt Associates, 2015a). The selected agency is referred to as the family planning agency.
2. Next, the evaluator works with the leadership of the family planning agency to identify appropriate key informants and schedule a meeting with them. During that meeting, the key informants are asked to complete the questionnaire. Only one questionnaire is used per country. The questionnaire collects information on the criteria needed to calculate scores for each specific stewardship capacity indicator, and about data sources or documents that confirm that the criterion is met. For those criteria that are not met, qualitative information about specific obstacles is gathered which—if needed—can be used to inform subsequent interventions for capacity development.
3. Upon completion of the questionnaire, the evaluator uses the Excel spreadsheet to calculate the scores for all stewardship indicators.
4. The evaluator uses the template to draft the stewardship assessment report.

6. DISSEMINATING STUDY FINDINGS AND ADVOCATING DATA USE

Even the greatest research breakthroughs mean very little unless they are successfully communicated to decision makers.

(Porter & Prysor-Jones, 1997)

To increase the use of results of the in-depth analysis of the family planning market, a dissemination strategy that ensures that all TMA stakeholders have the information that is relevant to their needs is called for. The potential users are likely to be people with very different expertise and needs. A good dissemination strategy involves multiple dissemination formats, each with content tailored to its specific target audience (Fisher & Foreit, 2002; Porter & Prysor-Jones, 1997).

WHICH STAKEHOLDERS SHOULD IN-DEPTH FAMILY PLANNING MARKET ANALYSES TARGET?

Effective dissemination of the findings about the family planning market can be a challenge, requiring knowing the different groups of stakeholders and what is of most interest to each group. The relevant stakeholders are anyone in a position to make a decision or alter policies and activities in response to new information, such as government officials and policymakers, researchers, service providers, donors, program managers, and field workers. Producing specific information of interest to each group of stakeholders will increase the likelihood of desired involvement. However, all of the key findings that come from a TMA analysis may not be relevant or of high interest to every type of stakeholder. Stratifying the audience according to their interests, needs, and knowledge level will make it easier to highlight information that will be of value to their particular role within the family planning market. It will also facilitate presentation of information in a format suitable for each group of stakeholders.

HOW CAN WE ADDRESS THE NEEDS OF VARIOUS STAKEHOLDERS?

The users of research findings may not be professional scientists. Formatting the technical results of the analysis into concepts and language that are understandable to type of stakeholder becomes essential (MEASURE Evaluation, 2009; Population Reference Bureau, 2003; Porter & Prysor-Jones, 1997). Communicating research findings should entail more than making presentations based largely on a series of tables and figures. In many cases, a much better communication strategy would be to turn the findings into compelling narratives that capture the most significant implications of the research. As a general rule, the content of any dissemination materials should be clear, concise, practical, and actionable for the target audience. Therefore, it is important to consider what is of most interest to each group, and how to best communicate the information they need, as follows:

Researchers and evaluators

Because researchers and evaluators often use research findings with the objective of informing future projects and interventions, they need to be confident that the research is sufficiently rigorous to support the conclusions and recommendations. They need to be able to judge the scientific value of the study, assess the adequacy of the study design, and, if they want, replicate the study. These needs are best addressed through technical research reports that provide details about the study design and method. Academic channels of communication also include articles in peer-reviewed journals, as well as oral and poster presentations at professional conferences.

Policymakers, government officials, and donors

Policymakers, government officials, and donors need accurate assessments of the performance of the family planning sector as well as its problems and potential solutions. They are also interested in the likely impacts of policy shifts and interventions. Because these stakeholders need to know what is and is not working, it is important to share any negative findings. They also need to know whether there is evidence to support a scale-up of program activities. Hence, it is important that these stakeholders are made aware of important data gaps, if any, and the resources needed to collect the missing data. This group of stakeholders needs actionable recommendations that they can use for decisionmaking and to advocate new policies. It is also important for them to see how the findings and recommendations support their larger policy objectives.

Most government sector officials and donors do not have the time or expertise to read lengthy technical research reports. The best formats to disseminate information to this group are policy briefs, brochures, and executive summaries that highlight actionable recommendations for decisionmaking. It is also customary to invite policymakers, high-ranking government officials, and donors to dissemination conferences.

Program implementers

Program implementers need timely feedback to guide operational or planning decisions. Upper-level managers are often best served by an executive summary with the key findings and programmatic recommendations. However, lower-level managers (such as district supervisors) may need a detailed report with site-specific information. Because preparing detailed research reports is time consuming, scheduling regular meetings with program implementers can help ensure that information is communicated in a timely manner and that the analysis addresses their needs. Audiovisual presentations with charts and graphs are effective for disseminating information succinctly during the meetings.

WHICH DISSEMINATION FORMATS ARE APPROPRIATE?

Written documents

As the needs of stakeholders vary, it is often necessary to produce more than one written document. Most likely, there will be a need to produce a detailed technical research report, as well as some kind of summary of findings and recommendations.

- Technical research reports

It is essential that a final research report be produced that describes the in-depth analysis of the family planning market. Such a report should describe the study background, review the literature, and describe the study method, findings, and recommendations. The description of the method should be sufficiently detailed to fend off any concerns about the rigor of the study and to enable replication of the study. However, research reports should be written in a style that is appropriate for the main target audience. Often, this audience consists of program implementers who are neither trained nor interested in research methods. To avoid obscuring important findings, technical material on sampling and study design should be presented in a separate section or in an appendix.

Program implementers may not see the relevance of the findings for program planning. Pointing out the potential implications for program improvements can facilitate a clearer understanding for program planners. Input from program implementers should be solicited about these recommendations before production of the final report.

Research reports are sometimes criticized for being overly complex, taking too long to prepare, and being outdated by the time they appear. The concern that research reports are too complex can be addressed by putting technical content about the study method in separate sections, using simple graphics to present key findings, and avoiding technical jargon in the results and discussion sections. A concern that having to wait for the research report may delay programmatic decisions can be addressed by releasing interim reports as soon as relevant findings become available. Including an executive summary of the main report that focuses on the main findings and programmatic recommendations will help address the needs of program planners.

- Research briefs, organizational web pages, information services, and other dissemination formats

Many organizations disseminate summaries of key study findings through research briefs. Unlike executive summaries, research briefs typically include graphs or pictures. Dissemination to wider audiences can be achieved by submitting research briefs for inclusion on popular health and development information service websites, such as the Communication Initiative Network (www.comminit.com) or Eldis (www.eldis.org). Key study findings are sometimes disseminated in the form of PowerPoint slides prepared for stakeholder presentations, conference presentations, and so forth. Adding speaker notes can help make the slides more suitable for dissemination as a stand-alone tool.

- Articles in peer-reviewed journals

Peer-reviewed articles are ideal for reaching the larger community of family planning researchers and practitioners. Because of the rigorous review system, publishing in peer-review journals gives the research credibility.

Presentations at professional conferences

Conference presentations are an effective way to disseminate study findings to the larger community of family planning researchers and practitioners. Large conferences typically accept submissions for oral presentations and poster presentations. Sessions typically comprise four 15-minute oral presentations, followed by a question-and-answer period. Sessions may have a formal discussant who critiques the presentations. Due to time and space constraints, conferences accept only a limited number of oral presentations, which makes them prestigious. Poster presentations involve preparing a large poster that summarizes the study objectives, key findings, and recommendations. Poster sessions typically last two hours during which conference participants visit the posters and speak with the presenters. The two-hour time slot provides ample opportunity for sharing information and ideas with other researchers and practitioners working on similar topics. Conferences are ideal for reaching professionals in the same field, but they are not suitable for rapid information sharing. Most conferences are held only once a year and the deadline for proposing presentations is normally at least six to eight months prior. Hence, it may take one and a half years before study findings can be presented at a major conference.

Face-to-face meetings

Holding frequent small meetings with key stakeholders throughout the research process is a good way to keep them informed about the study's progress and findings. This may reinforce the stakeholders' support for the study and increase use of results. Frequent small meetings also enable you to learn about questions and concerns the stakeholders may have, thereby creating an opportunity to address them before the final study report is prepared. If funding permits, an end-of-study dissemination conference can help disseminate key findings to a wider audience of stakeholders, engage them in a discussion of the implications of the findings, and build consensus about potential avenues for program improvements. Consensus building is particularly important, because TMA involves representatives from different supply sectors.

WHAT CAN BE DONE TO INCREASE USE OF DATA AND FINDINGS?

Analysis results may be used in a variety of ways by each market sector. For example, the findings may help the public sector adjust the quantity of subsidized family planning products and services available or reassess distribution strategies to increase their target populations' access to free products, thereby reducing the misallocation of resources. The NGO sector (including social marketing organizations) may be able to better identify current gaps and the types of family planning needs that exist within these populations. The commercial sector may benefit from information about the preferences of their target audience. The purpose of developing a comprehensive dissemination plan is to equip stakeholders with enough information and motivation to lead them to some form of desired action. Ideally, the different groups of stakeholders will incorporate the data and findings presented to create and implement improved programs, policies, and procedures addressing family planning access and delivery.

A number of steps can be taken to increase the use of analysis results. Being aware of potential barriers that could prevent stakeholders from accepting or implementing recommendations based on the TMA analysis will allow researchers to better prepare for addressing these concerns and offer strategic solutions during the planning and dissemination processes. Common barriers are a lack of access to information; difficulty connecting the relevance of research findings to specific groups of stakeholders, the time commitment and funding required for presentation of research findings, reading lengthy reports or publications, and attending meetings; trusting that research findings and presenters of information are credible; and an inability to understand complex research methods.

As part of the landscaping assessment, a list of decision makers from each of the three sectors (public, NGO, and commercial) most likely to be interested in the family planning market will have been identified, and this group will have been fully informed about the TMA objectives (Brady, et al., 2016). Because decision makers are the stakeholders for the in-depth analysis of the family planning market, it is important that they feel ownership of the study. Active involvement in all aspects of the study, including the development (and any subsequent revisions) of the objectives, study implementation, and interpretation of results will help build this ownership. To encourage their involvement, it may be helpful to identify specific times when the key stakeholders can meet to review progress and participate in the major decisions related to it. The more actively involved they are, the more likely the stakeholders will be to use the study's results. As stewards of the TMA process, the government can play an important role, by coordinating the involvement of stakeholders from different sectors.

Involving stakeholders in the study from all three sectors is likely to help identify barriers that may prevent stakeholders from acting on the study recommendations. Incorporating solutions to barriers that are pertinent to each sector (such as ensuring that survey instruments include questions that are particularly pertinent to the stakeholders' interests and that the analyses address research questions of interest to them) is likely to facilitate an increase in positive acceptance and use of data and findings.

Interim and final study reports should include a section on "Study Implications," clearly and succinctly indicating what the recommended actions are that arise from the study for each sector. At end-of-study dissemination meetings, sufficient time must be allotted for participants to be able to fully discuss the study results and the recommended actions. It is also advised to allot time for the meeting participants to do small group work to develop an action plan for using the results.

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TOOLS AND RESOURCES

The tools and resources referred to in this document are available in *Handbook for Research on the Family Planning Market, Volume 2: Tools and Resources for an In-depth Analysis of the Family Planning Market* (Meekers, et al., 2016b).

Tool 1:	Data source mapping
Tool 2:	SPSS syntax to calculate the DHS Wealth Index
Tool 3:	Instructions for adding an International Wealth Index data set to an existing DHS data set
Tool 4:	Coefficients for calculating the International Wealth Index (IWI)
Tool 5:	SPSS syntax to calculate the International Wealth Index (IWI)
Tool 6:	Calculating the Comparative Wealth Index (CWI)
Tool 7:	Parameters to convert the DHS Wealth Index to the Comparative Wealth Index
Tool 8:	Using survey data to estimate the number of contraceptive users
Tool 9:	Merging data sets from different survey waves
Tool 10:	Illustrative example of DHS data mining (Nigeria DHS)
Tool 11:	Obtaining institutional review board (IRB) approval for a study
Tool 12:	Sampling strategies
Tool 13:	Model TMA household survey questionnaire
Tool 14:	Model TMA retail audit/survey questionnaire
Tool 15:	TMA indicator reference sheets

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**United States Agency for
International Development**

Global Health Bureau
1300 Pennsylvania Avenue, NW
Washington, DC 20523
tel +1 202-712-1150
www.usaid.gov

The Evidence Project

Population Council
4301 Connecticut Avenue, NW,
Suite 280
Washington, DC 20008 USA
tel +1 202 237 9400
evidenceproject.popcouncil.org

PATH

2201 Westlake Avenue,
Suite 200
Seattle, WA 98121 USA
tel +1 206-285-3500
www.path.org

MEASURE Evaluation

Carolina Population Center
University of North Carolina at Chapel Hill
400 Meadowmont Village Circle, 3rd Floor
Chapel Hill, North Carolina 27517 USA
tel +1 919-445-9350
www.measureevaluation.org

