Methods for Estimating the Costs of Family Planning

REPORT OF THE EXPERT GROUP MEETING ON FAMILY PLANNING COSTING

Photo courtesy of John Isaac, World Bank

MEASURE Evaluation

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Report of the Expert Group Meeting on
Family Planning Costing
International Student House
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BACKGROUND

The current interest in revitalizing family planning (FP) programs puts increased attention on the estimation of resource needs, especially those that are financial. While estimates of the potential for expansion of service uptake have been made and are reasonably reliable, estimating the costs of such expansion are more challenging. While there have been many family planning cost studies and several estimates of program costs, many of these are either old or rely on old data. Moreover, there are inconsistencies in methodologies used making comparisons difficult.

This report addresses issues related to methods of estimating family planning program costs. Such estimates have been used by government officials to plan national and sub-national budgets, by nongovernmental organizations (NGOs) and donors to determine levels of donor support at all levels, and used for advocacy purposes at all levels to highlight shortfalls in funding or to put FP costs into perspective for various audiences. This paper will examine a variety of models and studies that represent this range of audiences and purposes.

To develop recommendations for costing family planning programs, the MEASURE Evaluation Population and Reproductive Health (PRH) associate award project convened a meeting of international experts composed of donors, international cooperating agencies, and others working in the field.[1] The meeting reviewed the current state-of-the-art of costing tools, discussed the kinds and levels of cost information that is desirable, and made recommendations for standards and methods for measuring the costs of family planning programs.

As background documents for the meeting, two papers were commissioned.[2] One, by Eva Weissman and John Stover, was a literature review that looked at methodology issues around estimating unit costs. The second paper, by Brian Briscombe, looked at issues on projecting the costs of family planning programs.

This report reflects a summary of the discussion that took place during the Expert Group Meeting as well as some of the issues raised by the background papers.

KEY ISSUES

Experts at the workshop discussed how cost inputs vary depending on the intended audience or intended analytic use. Estimating the cost of any service is complex because there are many different inputs that can be costed to provide the service and there are often other services that may be offered at the same location. This is especially true in health care and even more so for family planning. So it is important to understand the purpose for a cost study and the users of such information.

For example, two studies may focus on the direct costs of FP, yet one study may exclude labor and overhead costs because the study's target audience is only interested in the costs of FP commodities and supplies. One global study may include FP program support costs such as FP education, logistics

1. See appendix A for the meeting agenda, list of participants, and break-out session instructions.
2. See appendices B and C for these papers.

system strengthening, advocacy, etc. while another global study may make no effort to include such categories of expenses.

Such discrepancies in study breadth or scope sometimes arise intentionally because, for example, some cost studies are run to help donors or NGOs to determine their budgets, while other studies are run to influence policy-makers. These different audiences are asking different questions and therefore a study may focus on its target audience's particular interests. If a donor intends to fund only public sector FP commodities, the costing study might only require information on commodity costs for the public sector. For example, the CastCost model, among others, is designed for such an audience. This model calculates only the cost of FP commodities. Service provider budgeting often requires information on a broader range of costs, including commodities, personnel, facilities, and overhead costs. Service providers and their funders usually need to know their full costs and costs are allocated across various activities. In this case, the study audience would not need to know anything about public sector slack time or other such costs.

Policy analysts (including policy advocates), however, may be interested in just such costs if they take a health system approach or attempt to estimate the costs and benefits of FP versus other public interventions. Policy analysts might also need to impute costs for volunteers or donated items when trying to measure the economic or social costs and benefits. National policy-makers may be interested in such arguments in order to determine which policies to support or prioritize, especially if the decision means reallocating funds from one program or area to another. Government officials or international donors responsible for funding various elements of FP provision will be more interested in estimates of actual costs for the programs they intend to fund.

MAPPING POTENTIAL USES AND COST ELEMENTS

In considering what is important in costing family planning, understanding how the data will be used and by whom is vital. We identified six key areas of use, which are discussed below. Following that, we present the major cost elements.

Uses of Cost Data

Program management concerns decisions at the level of a service program around how best to deliver and maintain service delivery so as to achieve program targets. It includes operational plans at a detailed level such as how many contraceptives to procure, how many staff members are needed in various geographic levels and decisions at a subnational level.

Strategic planning for reproductive health for the ministry of health concerns medium- to long-term plans (normally five years, but can extend to 10 years) and strategies at the design stage of an overall program of services. This will typically involve setting strategic targets in terms of service delivery over time and to specific populations (e.g., young single women, low parity women, rural women). It will also involve a broad strategy for service delivery, such as community-based distribution (CBD) or fixed clinics, and will include health systems development necessary to support the program.

Strategic planning for NGOs is similar to that for a central ministry but is at a lower scale, and would concern only the target populations served by the NGO. Typically, an NGO would have a program plan for five years, but this may depend on its funding cycle. NGOs also may have fewer choices to make relative to a national health ministry in terms of services they offer or the way those services are delivered.

Policy and advocacy refers to the first steps in designing a broad intervention to deal with a public health issue. Advocacy involves identification of a problem, estimation of its importance and the benefits of dealing with the issue, and communication of this to stakeholders including decision makers. For example, a national leader or minister may not be aware of the long-term implications of rapid population growth or what it might take in terms of family planning to reduce that rate of growth. Policy formulation involves developing policies aimed at resolving an issue and declares broad objectives and strategies that are then made more concrete through strategic planning.

International donor decisions refer to donors such as the U.S. Agency for International Development (USAID), the World Bank, or the United Nations Population Fund (UNFPA) to provide funding for family planning. This may be imbedded in a more general donor framework for international assistance aimed at a particular country (e.g., USAID's Investing in People program.) It may also involve decisions to provide direct funding to the host country or technical assistance and capacity building through implementing partners and it may cover only some of the areas that need funding. It also may intersect with or have implications for a national government's strategies and decisions if it involves establishing an international agreement, such as the United Nation's Millennium Development Goals or the 1994 International Conference on Population and Development (ICPD) action plan, which was facilitated by the United Nations but signed off on by member states.

Cost-effectiveness and cost-benefit analyses are decision-support methodologies that can be used in some of the other areas (e.g., strategic planning, advocacy, resource allocation). Cost-effectiveness calculations typically provide an estimate of the financial cost to produce a unit of output (e.g., cost per couple-year of protection [CYP] per contraceptive method) while cost-benefit analyses tend to involve a comparison of the financial benefits of an action compared to the (marginal) costs (e.g., funding saved on childhood immunizations per dollar spent on family planning).

Cost Elements

As noted above, there are many potential cost elements to be considered. Below are the main ones considered at the expert group meeting:

Commodity costs refer to the costs of contraceptives and other medical supplies. For contraceptives, normally the "unit" price is the price for a single unit or dose, i.e., one condom or one packet of oral contraceptives. Other medical supplies include such things as surgical gloves, injections, and other supporting materials required to provide family planning services. Commodity costs may include the logistic system costs of getting the commodities to the point of service or these may be included in central ministry costs (see below.)

Labor costs of paid personnel providers refer to the financial costs of employing health service personnel who are paid in connection with the provision of the service. This includes physicians, nurses, other paramedics, lab technicians, and office staff. The costs include salaries and employee benefits, such as paid time off, medical benefits, pensions, etc.

Opportunity costs of using volunteers are estimates of what a volunteer's time is worth. This is normally measured by estimating the value of volunteers' time by considering what salary they would have been paid to do the work.

Overhead costs of facilities include utility costs, such as heating, lighting, water, and fuel for electric generators.

Service delivery administration and supervisory costs cover the costs of personnel not directly involved in providing patient services but who are involved in the administration of the health delivery. This may include accountants and finance staff, and hospital or clinic directors.

Capital costs are the costs of fixed assets with a "life time" of more than one year that are used to support the service delivery. This includes the costs of physical plants such as a building and the value of the land on which it is located, vehicles, generators, medical equipment, and furnishings (such as beds).

Staff training and professional development can cover the costs of providing in-service and pre-service training that is targeted at the service in question (in this case, family planning). It can cover the costs of short-term training services, such as those offered by a service delivery project.

Demand creation refers to costs incurred in providing information to current and/or prospective clients aimed at increasing the effective use of services. It includes expenditures on mass media campaigns and things such as information, education, and communication (IE&C); and behavior change communication (BCC).

Client out-of-pocket and opportunity costs are costs incurred by clients in accessing services that are not counted in point-of-service costs that a client may pay for. For example, transportation and the value of time lost in traveling to and receiving services would be included here, but not a service delivery fee paid by clients to a clinic.

Central and district level ministry costs are governmental and administrative and other supervisory costs associated with the family planning program. It may include the costs of a family planning or reproductive health directorate at the central ministry or district levels which are not incurred at the point of service level.

Donor administration costs are those associated with administering a donor-funded family planning program at the country level. It would not include the family planning program costs that the donor supports.

M&E research costs are costs associated with data collection for monitoring and evaluation, including family planning research. These costs would typically be incurred at a district or central level, and include the costs of any personnel involved in the collection and analysis of data. However, M&E research costs may be included in central and district level ministry costs and in donor administration costs. The costs of data clerks at the service point level would be included in service delivery administration and supervisory costs above.

Recommended Cost Elements According to Intended Use

In line with the above, we constructed a matrix of potential uses for a cost study and cost elements. Participants in the workshop were asked to rank the importance or relevance of each cost element for each use. While we had originally asked participants to rank each cost element according to the use on a scale of 1 to 4, we found in the end that it was more useful to designate a cost element as important (X) or not important (O), as summarized in table 1.

Table 1: Matrix of Uses and Cost Elements

	Program management	MOH, RH strategic planning	NGO strategic planning	Policy and advocacy	International donor funding decisions	Cost effectiveness; cost-benefit analysis
Commodity costs	**X**	**X**	**X**	**X**	**X**	**X**
Labor costs of paid personnel providers	**X**	**X**	**X**	**X**	**X**	**X**
Opportunity costs of using volunteers	**O**	**O**	**O**	**O**	**O**	**X**
Overhead costs of facilities	**X**	**X**	**X**	**X**	**X**	**X**
Service delivery administration and supervisory costs	**X**	**X**	**X**	**X**	**X**	**X**
Capital costs	**O**	**X**	**X**	**X**	**O**	**X**
Staff training and professional development	**X**	**X**	**X**	**X**	**X**	**X**
Demand creation; IE&C; BCC	**X**	**X**	**X**	**X**	**X**	**X**
Client out-of-pocket and opportunity costs	**O**	**O**	**O**	**O**	**O**	**X**
Central ministry costs	**O**	**X**	**O**	**X**	**O**	**X**
Donor administration costs	**O**	**O**	**O**	**O**	**X**	**X**
M&E, research costs	**X**	**X**	**X**	**O**	**X**	**O**

X = important, O = not important.

Starting with program management, the most important cost elements concerned those most associated with maintaining and improving quality service delivery. This includes commodity costs, service provider labor, overhead costs of facilities, administration costs, staff training, demand creation, and M&E/research.

For strategic planning for reproductive health for the ministry of health, costs that should be included contain all those for program management, but include also capital costs and central ministry costs. Regarding NGO strategic planning, the recommended costs elements mirror those for program management but include also capital costs. For policy and advocacy decisions, the recommended cost elements include all those recommended for MOH planning except for M&E/research costs. As regards international donor funding decisions, cost elements included those that they typically pay for: commodity costs, service personnel and administrators, overhead costs of facilities, staff training, demand creation, M&E/research, and donor administrative costs. Lastly, cost-effectiveness and cost-benefit analysis should include everything, including client's out-of-pocket costs, but not M&E/research.

KEY UNIT COSTING ISSUES AND RECOMMENDATIONS

Unit cost refers to a cost per unit of service. In family planning, there are several kinds of unit costs. One is cost per visit. This is the cost that is incurred when a user visits a point-of-service and receives a service, such as a contraceptive, a follow-up visit, or a removal of an IUD or implant. If there is a way to standardize or estimate the number of such visits for a given method, this can be used to estimate the cost per user for a specified period of time, normally a year. This cost is often reported as cost per user of a specified method. When this is the case, an average user cost can be calculated by taking the weighted average of the method-specific user costs where the weight is the proportion of users by method. Unit costs can also be further broken down into costs per acceptor and costs for continuing users.

Another often used family planning unit cost metric is cost per couple-year of protection (CYP). In theory, the cost per user alluded to above is the same as a CYP. Couple years of protection are computed based on CYP "coefficients" that are used in calculating commodity requirements. So for example, a CYP coefficient for oral contraceptives may be 13 or for condoms it may be 120. In theory costs per user and per CYP should be similar if not identical if they have been computed using the same cost elements (numerator). However, in practice because CYP is so closely associated with commodity costs, often CYP costs are based on commodity costs. Janowitz and Bratt (1994) discuss several other issues related to computing costs per CYP.[3]

Another conceptual issue is marginal vs. average costs. In most cases, the term "unit cost" refers to the average cost per user or per CYP. Most studies assume that the average cost is constant — that is, that it costs as much per user to provide services to the first user as to the 10,000th user. In reality, average cost may change with the level of service delivery, meaning that the marginal cost will change. There is some evidence to suggest that the average cost per user will fall as contraceptive prevalence increases

3. Janowitz B, Bratt J. *Methods for Costing Family Planning Services*, Research Triangle Park, NC: Family Health International, 1994

because some of the fixed costs of start-up can be spread over more and more clients.[4] On the other hand, we can also speculate that at high levels of contraceptive prevalence rate (CPR) the marginal cost of reaching hard-to-reach women with services would be high so that the average or unit cost would rise. Without more research there is currently no clear guidance on this issue. This is an issue that is relevant to projecting or estimating program level costs.

A detailed and exhaustive description and analysis of unit costing issues is included in a background paper for this meeting.[5] The paper lists a number of unit costing issues. Below we discuss these and a few others that arose during the workshop.

Inclusion/exclusion of different cost components — Some studies include only direct costs of services, others include indirect costs such as facility-level overhead costs, and still others add the costs of general program administration, training, and IE&C activities.

Allocating joint costs — There are a few cost elements for family planning that concern resources that can be used by other health services. These include some personnel, overheads, some capital and building costs, and administration costs:

- *Personnel costs:* With family planning services often provided in an integrated setting together with other health interventions, there is a wide variety of methods used to estimate and allocate personnel cost to family planning services. It is important to include as wide an array of staff as possible that are related in one way or another to service provision. In the previous section we listed service provider staff that can be included. The issue of allocating service provider staff costs to family planning is a thorny issue and is dealt with comprehensively in Janowitz and Bratt (1994).[6] In general, if detailed time-and-motion data or patient-flow data are not available, one can allocate staff costs on the basis of the percentage of clients in a facility that are family planning clients. This same procedure can be used to allocate administrative staff costs.
- *Indirect, overhead costs:* A similar challenge is faced when dealing with overhead costs, which often account for a large proportion of total costs of a service. When these costs are incurred in a setting where family planning is one of several services being provided, one can use the same procedure as with personnel time discussed above.
- *Capital and building costs:* For those capital items like generators that are not specifically for family planning, we again face the need for an allocation rule and the suggestion is to allocate by client numbers. For buildings, an alternate approach would be to allocate according to the amount of space used that can be specifically designated as family planning space. If family planning is provided in the same area as other health services, then the issue is similar to the cases discussed above.

Estimating total capital and building costs — Capital costs, when included, are usually expressed in annual terms. Annualization requires deciding the useful life of various types of capital goods. Local accounting rules may help inform the assumptions used here. Often capital goods (such as a generator

4. Knowles JC, Wagman AE. The relationship between family planning costs and contraceptive prevalence [presentation]. Presented at the Annual Meeting of the Population Association of America, March 21-23, 1991, Washington, DC.
5. See Appendix B.
6. Many view the procedures and approaches in this manual as the "gold standard."

or a car) are amortized over a five-year period and buildings over a 25-30 year period. Building costs offer a special challenge for facilities that are old and no records exist as to what the actual construction costs were. In this case it may make sense to estimate the replacement cost of new construction. Another issue, especially pertinent in urban areas, is the value of the land on which the facility sits. One approach here is to see what land is selling for in the neighborhood and use that information as a guide to the building's estimated land value.

Treatment of "free" components — A background paper for the meeting noted that several cost studies varied in their costing approach to donated or free goods, mainly commodities; and while some studies included these costs, others did not. A similar issue arises in the case of volunteer or otherwise unpaid labor. Here the recommendation depends on the purpose of the study. If the costing study is being used to estimate what the financial burden of family planning is to an entity such as an NGO or the ministry of health, then resources provided free-of-charge should be priced at zero. However, if we are doing a societal level cost-effectiveness or cost-benefit analysis, then we would want to impute an opportunity cost to these elements. For commodities one would obtain the commodity costs from the national drug authority or from UNFPA. For volunteer labor one would use salaries in a comparable job.

Adjusting for quality — As with any calculation of unit cost, the quality of the service may play a role; two unit costs may be different because one has a higher (and therefore more costly) level of quality.

KEY ISSUES AND RECOMMENDATIONS ON PROJECTING FAMILY PLANNING PROGRAM COSTS

While understanding what the unit costs of providing services are can be useful in and of itself, the main use of unit cost estimates is in making cost estimates at a program, at a national, or even global level. Decision makers often want to know what it might cost to achieve a given level of contraceptive prevalence or to meet goals based on plans to scale up a program in a certain way. Again, workshop participants agreed that when designing projections, models, or analyses that utilize family planning cost data, one must first consider the audience's perspective. Whose costs are we projecting? Who is facing these costs: the donor, host country, or consumers? These issues are basically connected to selecting cost elements appropriate for the intended audience, as discussed above.

A background paper prepared for the meeting included a review of some of the main family planning models and projection studies.[7] A number of issues are reviewed in that document. In this section, some of the more pertinent and far-reaching issues that came up in discussion during the meeting are summarized.

Exchange Rates, Inflation, and Discounting

When the audience includes international donors, findings are often expressed in U.S. dollars while cost data are often collected in local currencies. When data collection has been recently collected,

7. See appendix C.

issues of exchange rate fluctuations are less significant; but when data inputs are old, then exchange rate movements can grow in significance over time.

For example, the U.S. dollar lost more than a quarter of its value between 2001 and 2008. This would indicate that studies that do not take account of exchange rate changes will underestimate the U.S. dollar global costs of family planning since the goods and services that the studies examine will cost more U.S. dollars than they used to cost, not just because the U.S. dollar has lost purchasing power relative to a basket of U.S. goods and services, but also because the U.S. dollar has lost purchasing power relative to other global currencies.

So if analysts or policy-makers want to know the actual current costs of programs so that they can make funding decisions, such adjustments would need to be made. A similar issue arises due to inflation in a country. However, if decision makers are more interested in the cost of a program in constant monetary units, then one would not use inflation factors or take account of exchange rate fluctuations.

On the issue of discounting, many projections of family planning costs take place over a long time horizon, often up to 50 years. Decision makers sometimes wish to know the cumulative costs of a program over such a long time. Family planning expenditures, while incurred at a moment in time, have carry-over impacts in the years that follow. In this regard, it is common to apply a discount rate to adjust for the fact that money invested now has an opportunity cost and could have been invested elsewhere yielding a return. Applying a discount rate in this case to future expenditures brings them forward to their "present value." This technique is probably the most appropriate when doing cost-benefit or cost-effectiveness analysis.

Time Period and Dynamic vs. Static Estimation

The time period over which program-level cost projections are made will of course determine the size estimation of the costs. The longer the projection period the higher the cumulative costs will be. But annual costs, even with discounting, will also increase because most countries have a built-in demographic momentum that drives up costs; even as family planning efforts may succeed in lowering fertility, and hence population growth, the number of women of reproductive age will continue to grow over the next 25 or 30 years. For example, Moreland and colleagues (2010) estimated that for 99 developing countries (excluding China), the annual family planning costs for the United Nations medium variant fertility projection was estimated at $7.7 billion in 2010, $12.12 billion in 2030, and $17.8 billion in 2050.[8] So the choice of the length of the projection period is important and will ultimately depend on the purpose of the cost exercise. In general we might expect that estimations made for national governments would be undertaken as part of a five-year or medium term (10- or 15-year) strategic planning exercise. Some donors may wish to look over a longer period, but others may have funding cycles that are shorter. For cost-benefit analyses, one normally looks at a period of at least 10 to 15 years and often much longer, 40 or 50 years, in order to capture the longer term dynamic implications of changes in population growth (i.e., the "demographic dividend.")

8. Scott Moreland, Ellen Smith ,Suneeta Sharma, *World Population Prospects and Unmet Need for Family Planning*, Futures Group, April 2010 (Revised October 2010).

Another issue is that of dynamic vs. static analyses. In Guttmacher Institute's *Adding It Up,*[9] the authors calculate what it would cost for countries to provide family planning services to all women with a current unmet need for family planning. Moreland and colleagues (2010) do the same. But the difference is that the Guttmacher study calculates what it would cost if instantaneously all women with an unmet need for family planning received these services, whereas the Moreland paper projects a gradual increase over time. So the Guttmacher approachr is what we are calling a "static analysis" since time is not a factor. Its primary goal is to provide information for advocacy purposes and, in that regard, it has been very successful. The Moreland paper, like others that are similar, is dynamic and probably more useful in mobilizing the required levels of funding for family planning.

Goal Setting and Dynamic Trajectories to Achieve the Goals

Related to the above discussion is the issue of setting goals and how to reach those goals. Obviously, in most cases, the more ambitious the goal, the more it is going to cost. Increasing contraceptive prevalence by 30% implies more services for the same number of women than would be needed to increase prevalence by 20%, and so a 30% increase would cost more. So the first question is what is the goal? In some cases, this goal may fall out of a plan or set of objectives that have been determined as part of a larger plan. For example, the recently established Growth and Transformation Plan in Ethiopia establishes a target of 65% CPR in five years. In other cases, the objectives are set specifically for family planning. In this later case, the objectives can be chosen so as to be realistic and achievable and part of what is achievable is what is affordable. So the costing projections may be used to help establish the goals.

An increasingly common goal that is used is reducing or eliminating currently observed unmet need. The concept of unmet need is attractive because it provides a quantified estimate of the percentage of women who have or could have a demand for family planning. The Guttmacher and Moreland papers referred to above (also discussed in the background in appendix C) do that as do a set of cost-benefit projections prepared by the Futures Group of family planning and the United Nation's Millennium Development Goals (MDGs).[10] However, as pointed out in the Moreland paper, the level of unmet need may be a moving target:

> …it should be recognized that levels of unmet need change over time and with the CPR. Hence, when a country reaches the target CPR, it is very likely to still have unmet need for family planning. This is because, as the CPR increases, there may be a "demonstration effect" that increases the acceptability of family planning among couples. Furthermore, as fertility preferences decrease, total demand for family planning increases, and this may change levels of unmet need.[11]

So the issue for analysts preparing cost projections would be how to take account of such changes over time.

9. Singh S, Darroch JE, Ashford LS, Vlassoff M. *Adding It Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health.* New York, NY: Guttmacher Institute; 2009
10. Moreland S, Talbird S. Achieving the millennium development goals: the contribution of fulfilling the unmet need for family planning [unpublished report to USAID]. Chapel Hill, NC; May 2006.
11. *World Population Prospects,* xx.

Another issue, despite the goal that is set, is when to reach the goal and what the dynamic path to reaching the goal might look like. We have previously discussed how the length of the projection period can influence the estimation of costs and the same logic applies to when a goal is reached. If, for example, a CPR goal is met quickly, the annual costs in the early years will be high since more women will be contracepting; but in the long run, if there were fewer births, the numbers of new women of reproductive age would be lower and costs would fall. If the goal is met slowly, the early costs will be low but become higher in the long run.

The selection of what dynamic path to assume for reaching a goal should be decided by what is feasible for the country in question. A fast scale-up may not be possible if demand creation needs to happen or if facilities need to be built or renovated.

Service Delivery Modalities

A corollary to preparing projections that reach an objective is specifying how such an objective might be reached in terms of the service delivery mode. Despite all the cost studies reviewed in the unit cost background paper, and in addition to the fact that there is a wide range of unit cost estimates by method, perhaps one of the biggest gaps in our knowledge is how costs differ between different ways in which services are delivered. Clearly, a community-based distribution of injectable contraceptives that uses community health workers will have different costs than what would be experienced in a fixed primary health care facility. And costs delivered in hospitals will be different from those delivered in health posts in rural areas. None of the models we looked at are able to take account of such differences even if the data were available.

RECOMMENDATIONS FOR GOING FORWARD

Based on the above discussion, the two background papers, and the group discussions during the expert group meeting, we present the following recommendations:

Harmonization — An effort should be made, perhaps through a multi-donor framework, to harmonize and standardize costing techniques at both the micro and macro levels. This would include standardization of definitions, and recommendations for how data are collected and the sources of such data. There a number of different estimates of the "global price tag" for expanding family planning coverage and a more standardized approach will help to reduce these disparities.

Documentation — While many studies are well documented, in some cases it has been difficult to know what cost elements are in a study or the even the sources of the data. This makes interpretation and comparisons difficult. Cost studies should include complete documentation on methods used, sources of data and cost elements included.

Next generation costing studies — In future, we recommend that cost estimates and studies be built into the design of family planning strategies and programs much like M&E systems are now becoming a more standardized component of service delivery programs. We believe it is as important to know what resources are being used in the delivery of services as it is to know who and to what extent those

services are being delivered. There is an emerging renewed interest in cost-effectiveness of health interventions and this could provide information for such analysis.

Capacity building for costing studies — Many of the costing studies reviewed in the two background papers were conducted by analysts who are not based in developing countries where the programs are taking place. In line with the above recommendation of next generation cost studies there is a need for countries to be able to conduct their own studies. We recommend that an effort be made to develop local capacities for conducting family planning costing studies in developing countries. This might be done at first on a regional basis, perhaps anchored at a university or research institution or through a global program such as USAID's Health Policy Project.

Community of practice — One effective way to facilitate communication among people interested in the same topic is to establish a community of practice. Communities of practice allow for members to network easily and to exchange experiences and views on a topic. We recommend establishing a community of practice for family planning costing so as to help achieve the harmonization of costing practices recommended above, and encourage documentation.

APPENDIX A: MEETING AGENDA, LIST OF PARTICIPANTS, AND BREAKOUT SESSION GUIDELINES

Expert Group Meeting Agenda

Agenda

Expert Group Meeting on Family Planning Costing Programs

International Student House, Washington, DC

June 10, 2011

8:30 Registration and Continental Breakfast

9:00 Welcome and Meeting Objectives - *Scott Moreland, MEASURE Evaluation PRH*

9:15 USAID Perspective - *Linda Cahaelen, USAID*

9:30 Participant Introductions

9:40 Review of Unit Costing Issues - *Eva Weissman, Futures Institute*

10:40 Coffee Break

11:00 Review of Issues on Projecting Family Planning Program Costs - *Brian Briscombe, Futures Group*

12:00 Lunch

1:00 Breakout Session Number 1

2:00 Report Back from Breakout Groups

2:15 Panel Discussion on experiences, challenges and needs in using family planning costing data
John Stover, Futures Institute

3:00 Breakout Session Number 2

4:00 Report Back from Breakout Groups

4:15 Plenary discussion and consensus agreement on priority recommendations

4:45 Adjourn

List of Participants at Expert Group Meeting

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Breakout Session Guidelines at Expert Group Meeting

MEASURE Evaluation PRH
Expert Group Meeting on Costing Family Planning Programs
June 10, 2011

Breakout Session 1

Issues in Estimating Unit Costs and in Projecting the Costs of Family Planning

Having read and listened to the background paper on unit costs prepared for the meeting and from your own experience and interests, we'd like you to think about what key recommendations to make concerning the ways in which family planning unit costs are measured and estimated. We believe it is important to do this in the context of how these estimates will be used. In the table on the next pages are listed some of the main cost categories as well as a list of potential uses of family planning unit cost data. We would like you to review these and indicate which cost elements are the most important for each use category. Please feel free to add any cost elements that you feel are missing.

Also, having read and listened to the background paper on projecting family planning program costs prepared for the meeting and from your own experience and interests, we'd like you to think about what key recommendations to make concerning s some of the other issues that are listed in the table on the following page. Please feel free to add other issues that are not listed.

Please use a scale of 0-3:
0: Not useful
1: marginally useful
2: somewhat useful
3: essential

Family Planning Program Costs and Uses

	Program management	Strategic planning	Policy and advocacy	Donor funding decisions	Cost effectiveness; cost-benefit analysis	Public sector resource allocation	sub-national costs
FP Cost Elements							
Commodity costs							
Labor costs of paid personnel							
Opportunity costs of volunteers							
Overhead costs of facilities							
Service delivery admin. And supervisory costs							
Capital costs							
Staff training and professional development							
Demand creation; IE&C; BCC							
Client out-of-pocket and opportunity costs							
Central ministry costs							
Donor administration costs							
M&E, research costs							
Other considerations							
Geographic scope							
Time frame							
Level of precision							
CYP or cost per user							
Time value of money							
Method mix							
Economies of scale							
Real vs. nominal costs							

MEASURE Evaluation PRH

Expert Group Meeting on Costing Family Planning Programs
June 10, 2011

Breakout Session 2

Going Forward: Outstanding Issues

In this session we'd like you to think about going forward and the "big picture." What is the agenda for family planning costing for the next 10 years? What don't we know in terms of costs and resource requirements that would help us to better plan and design programs and policies? The two background papers have shed some light on this as had our panel discussion. We have listed below some preliminary questions, but feel free to add questions.

1. Do we know enough about FP unit costs to be able to reliably project FP costs? What recommendations can you make to allow one to make such projections?

2. There have been many fewer costing studies in the past ten years compared to the 1990's and early 2000's. Should they be given a new priority?

3. Is there a demand for global or multi-country costing studies? If so, what elements and costing aspects should be taken into consideration?

4. Is there a demand for country-level costing studies? If so, what elements and costing aspects should be taken into consideration? Should strategic plans that include family planning include cost estimates?

5. What sources of funding FP costing studies and estimates might be available?

6. Given recent trends to integrate health services, is it still important to isolate the costs of family planning?

APPENDIX B: ESTIMATING UNIT COSTS OF FAMILY PLANNING: METHODOLOGY REVIEW

Background Paper Prepared for the
Expert Group Meeting on Family Planning Costing
June 10, 2011

Eva Weissman
John Stover
Futures Institute

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Estimating Unit Costs of Family Planning – Methodology Review

Introduction

The current interest in revitalizing family planning includes efforts to increase funding by donors and by host country governments. While estimates of the potential for expansion of service uptake have been made and are reasonably reliable, estimating the costs of such expansion has been more challenging.

To develop costing guidelines for doing these kind of calcualtions, the MEASURE Evaluation Population and Reproductive Health Associate Award will convene a meeting of international experts composed of donors, international cooperating agencies and developing country representatives on June 10. This paper is meant to serve as one of the background document for the discussion, taking a closer look at the cost estimates found in the existing literature on the unit costs of family planning.

Methodology

A review was carried out of the existing literature on the cost of family planning in terms of the cost elements included in these studies and the methodologies used for the calculation of unit costs.

The study built on previous efforts, in particular the large and detailed RH costing database compiled by UNFPA in the year 2003. This database contains, among other things, the results from all the family planning cost studies that have been carried out over the last 30 years, disaggregating and summarizing the data by contraceptive method, delivery method and country/region. Where available, it shows the costs broken down into smaller cost components (drugs and supplies, personnel cost, overhead, capital costs, etc.). In 2007, the family planning portion of this database was updated in the context of another USAID study[12].

The present study updated the database to the year 2010 and carried out an in-depth analysis of the costing methodologies used by all the studies contained in the database. In particular, the study looked at what costs elements were included (personnel costs, FP commodities, supplies, facility and administrative overhead costs, capital costs, training, IEC) and what methodologies were used to collect, calculate and allocate these different costs.

Results

Results are presented in three sections:

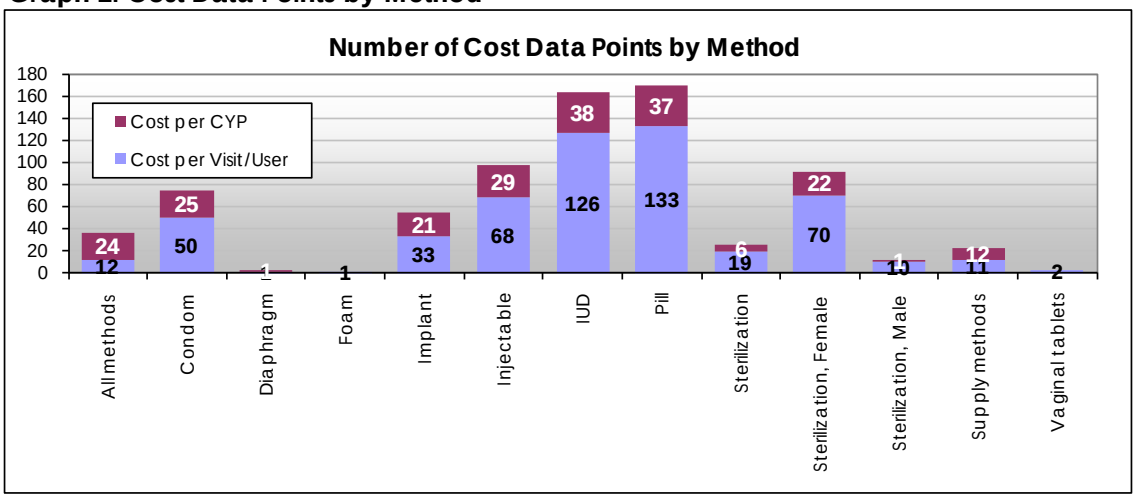
1) Analysis of FP cost studies included
2) Analysis of cost data
3) Analysis of methodological issues

I. FP Costing Studies and Data Points

Overall a total of 52 articles and studies were identified with a total of 753 data points, including both cost estimates per couple-year of protection (216 data points) and cost per specific types of visits (537 data points).

[12] Futures Institute/USAID. Dec. 2007. Cost of Family Planning Literature Review.

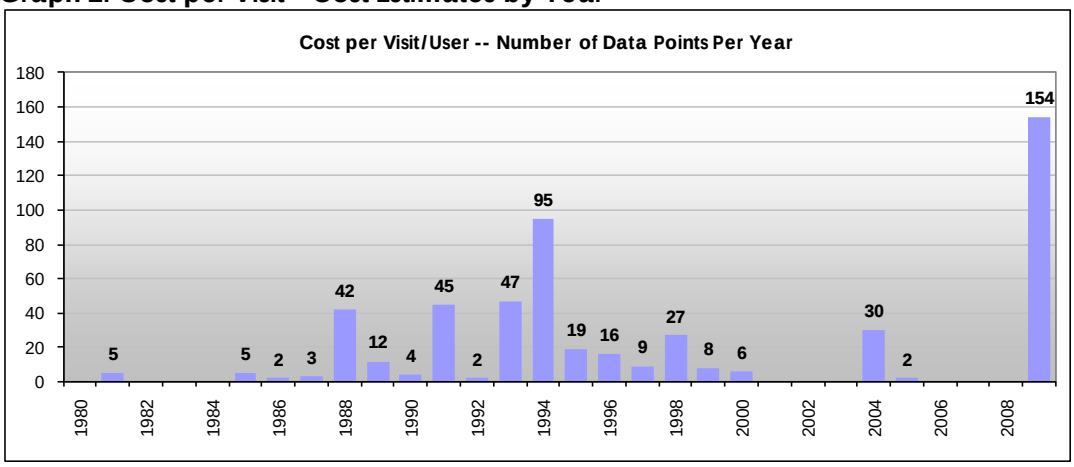
Graph 1: Cost Data Points by Method



a) Cost per Visit/User

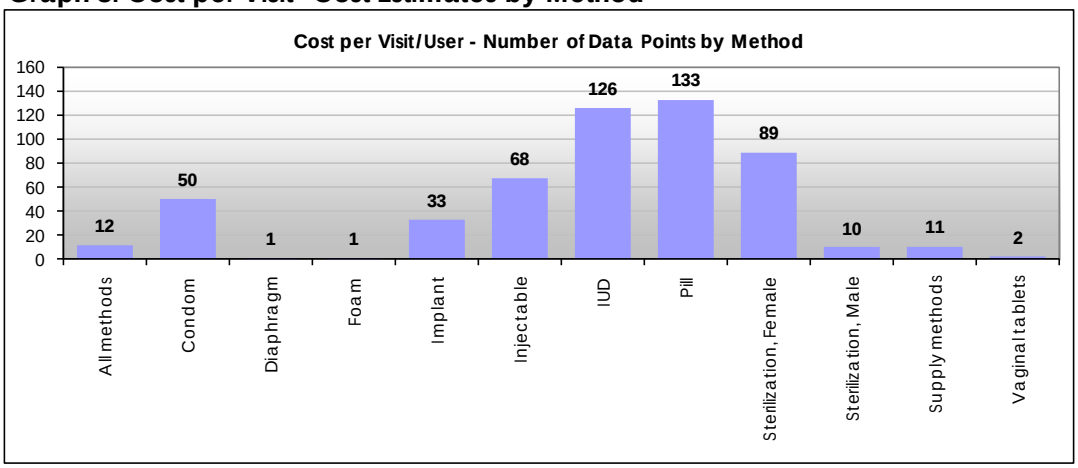
28 articles were identified which contained a total of 573 cost estimates for specific types of family planning visits. The following graph shows the number of cost estimates per year. After a large number of studies that preceded and followed the 1994 International Conference on Population and Development (ICPD) in Cairo, interest in the cost of family planning declined significantly. No studies at all were done in the years 2001-2003 and 2006-2008. The large number of data points in the years 2004 and 2009 were produced by only five studies, a study in Kazakhstan in 2004 and four country studies carried out by USAID in 2009 in Ethiopia, Jordan, Kenya and Mali.

Graph 2: Cost per Visit - Cost Estimates by Year



The studies covered the entire range of contraceptive methods. Oral contraceptives, IUDs and female sterilization were the best covered with 133, 126 and 89 data points, respectively, accounting for over 60% of all cost estimates identified.

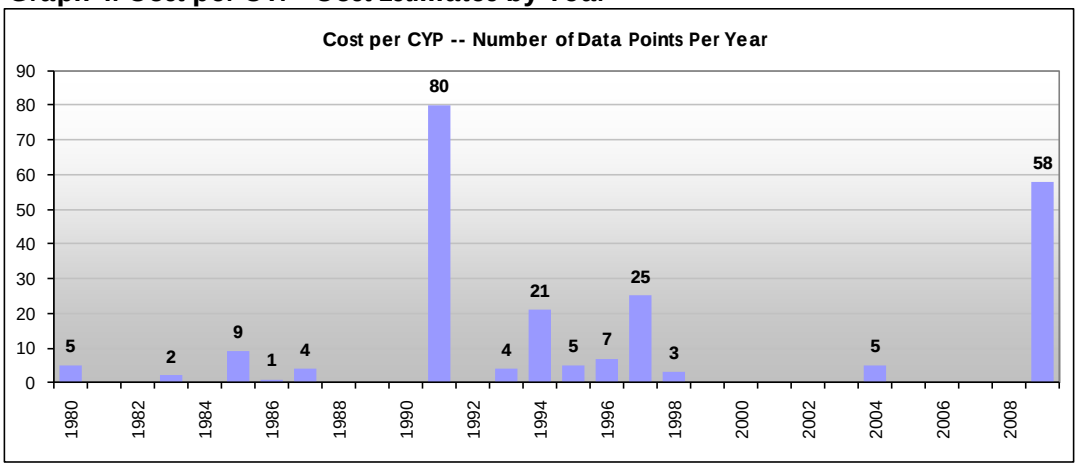
Graph 3: Cost per Visit- Cost Estimates by Method



b) Cost per CYP

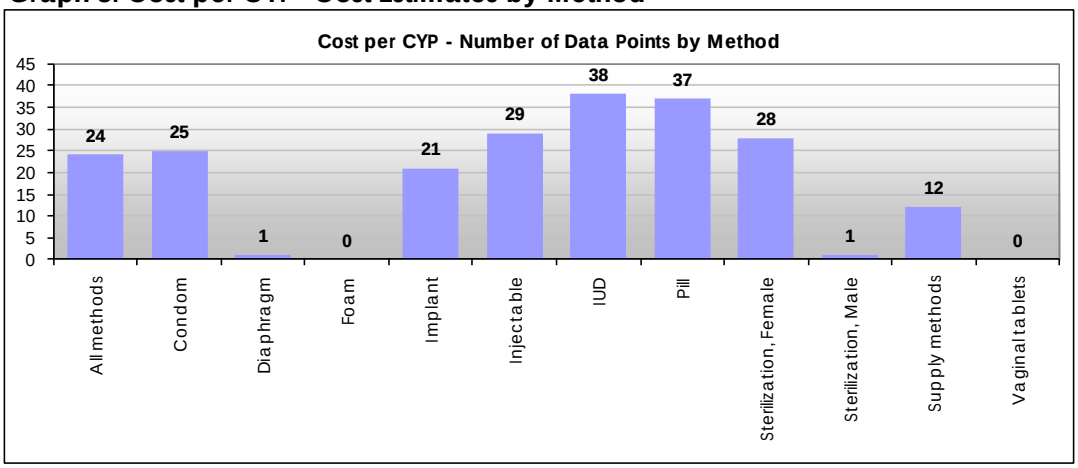
28 articles provided estimates of family planning cost per couple-year of protection (CYP). A total of 216 data points were identified. The largest number of cost estimates were from 1991 and 1994. With the exception of the five studies mentioned above which provided 5 and 58 datapoints respectively, no other studies could be identified for the last twelve years.

Graph 4: Cost per CYP- Cost Estimates by Year



Again, cost estimates covered the full range of contraceptive methods, with the five most common methods about equally well covered.

Graph 5: Cost per CYP- Cost Estimates by Method



II. FP Unit Costs

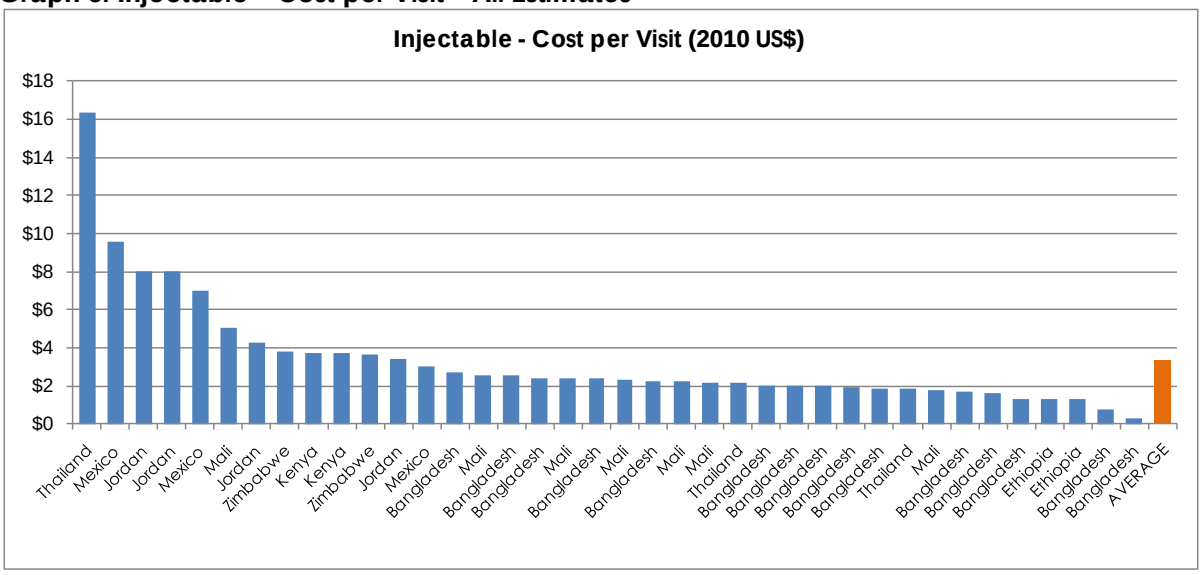
All cost estimates were converted to 2010 US Dollars to eliminate any differences in price levels over the 30-year period in which these studies took place. Cost estimates given in local currency were converted into US Dollars at the exchange rate prevalent at the time the study was carried out and then converted to 2010 US Dollars[13].

Unit costs for the different methods were analyzed based on different criteria, comparing estimates for the same FP methods

a) by types of costs included (direct costs only vs. direct + indirect costs,
b) by countries/regions and
c) by delivery channel (clinic- and community-based delivery).

The following graphs use the example of the unit cost for a visit for injectables to demonstrate the wide variation in cost estimates found.

Graph 6: Injectable – Cost per Visit – All Estimates

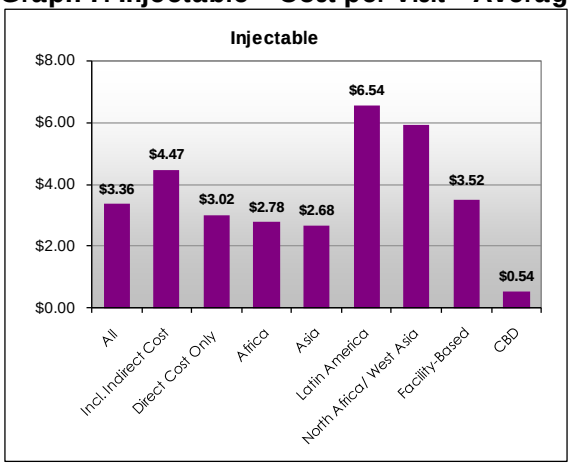


When the different unit costs were grouped by different criteria and averaged, cost estimates that included indirect costs, as one would expect, were on the whole higher than those based on direct cost only. The

[13] *The US GDP deflator used for the conversion was taken from the World Economic Outlook Database published by the International Monetary Fund (April 2007).*

differences observed between estimates from different regions were mainly due to differences in salary costs, with Africa and Asia having the lowest costs in this area and Latin America the highest. Salaries in the North Africa/West Asia region also tended to be high as that region includes several middle-income countries. Clinic-based delivery tended to be more expensive than community-based distribution usually due to the fact that CBD studies tended to included fewer types of costs.

Graph 7: Injectable – Cost per Visit – Average by Different Category



Another way to look at the data:

Graph 8: Injectable – Cost per Visit – Average, Minimum and Maximum Values by Category

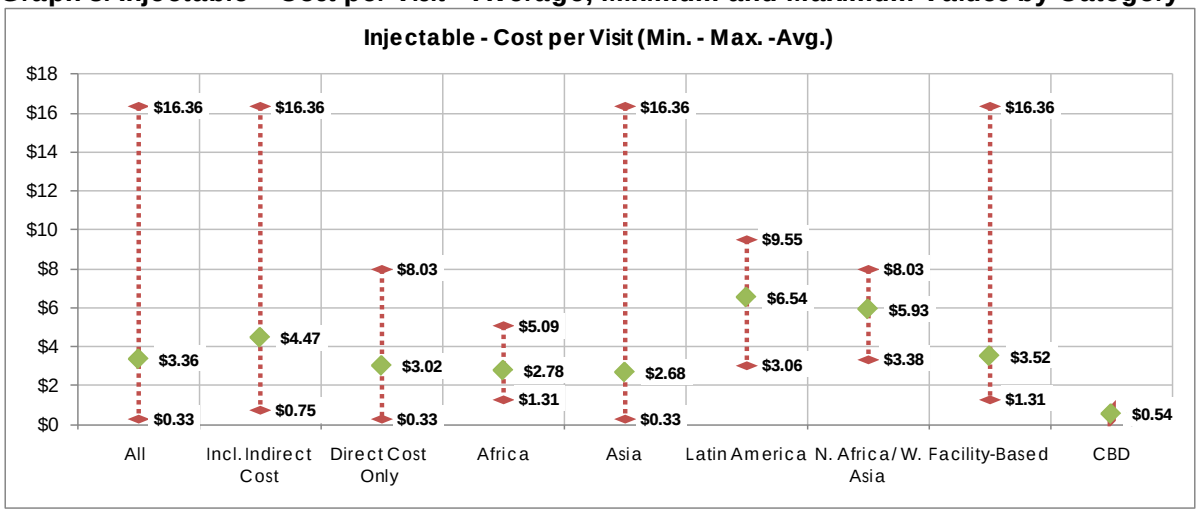


Table 1: Injectable – Cost per Visit

Country	Year	Delivery System/Provider	Direct cost Only Incl Overhead cost	Average cost per visit/user (US$) 2010 $	Drugs & Suppl.	Personnel	Fac. Overhead	Capital cost	Other	Injectable & Supplies	% of Total Cost	(Direct) Labor Cost	% of Total Cost	Fac. Overhead	% of Total Cost	Capital Cost	% of Total Cost	Other	% of Total Cost		Authors	Year	Title
USA	1995			**$47.70**																(60)	Westfall J, Maine	1995	The Contraceptive Implant and the Inject
Thailand	1989	Public sector	x	**$16.36**	x	x	x	x												(37)	Leoprapai, Boonle	1991	Cost of Public Family Planning Services an
Mexico	1996	Clinic, government	x	**$9.55**	x	x	x	x		$1.56										(20)	Hubacher D, Holt	1999	Increasing Efficiency to Meet Future Dema
Jordan	2009	Govt Hospital	x	**$8.03**	x	x				$1.03	13%	$7.00	87%								Weissman E	1991	The Cost of Family Planning in Jordan
Jordan	2009	Govt Health Center	x	**$8.03**	x	x				$1.03	13%	$7.00	87%								Weissman E	1996	The Cost of Family Planning in Jordan
Mexico	1995	Clinic	x	**$7.02**	x	x														(40)	Mitchell MD, Little	1999	Costing of Reproductive Health Services.
Mali	1994	Clinic	x	**$5.09**	x	x				$3.69		$1.40								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Intr
Jordan	2009	JAFPP (NGO) Facility	x	**$4.27**	x	x				$1.03	24%	$3.24	76%								Weissman E	2001	The Cost of Family Planning in Jordan
Zimbabwe	1995	Clinic	x	**$3.77**	x	x														(40)	Mitchell MD, Little	1999	Costing of Reproductive Health Services.
Kenya	2009	Govt Facility	x	**$3.76**	x	x				$1.29	34%	$2.47	66%								Weissman E	2009	The Cost of Family Planning in Kenya
Kenya	2009	NGO Facility	x	**$3.73**	x	x				$1.29	34%	$2.44	66%								Weissman E	2009	The Cost of Family Planning in Kenya
Zimbabwe	1998	Clinic	x	**$3.68**																(23)	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding S
Jordan	2009	UNWRA Facility	x	**$3.38**	x	x				$1.03	30%	$2.36	70%								Weissman E	2006	The Cost of Family Planning in Jordan
Mexico	1996	Clinic, government	x	**$3.06**	x	x	x	x		$1.56										(20)	Hubacher D, Holt	1999	Increasing Efficiency to Meet Future Dema
Bangladesh	1994	Clinic, government	x	**$2.75**	x	x		x		$1.11		$0.89				$0.75				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Mali	1994	Clinic	x	**$2.54**	x	x				$2.35		$0.19								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Intr
Bangladesh	1994	Clinic, government	x	**$2.53**	x	x		x		$1.11		$0.77				$0.65				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic, satellite	x	**$2.44**	x	x				$1.15		$1.29								(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Mali	1994	Clinic	x	**$2.39**	x	x				$2.27		$0.13								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Intr
Bangladesh	1994	Clinic, satellite	x	**$2.39**	x	x				$1.15		$1.24								(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Mali	2009	Govt Health Center	x	**$2.34**	x	x				$1.00	42%	$1.35	58%								Weissman E	2009	The Cost of Family Planning in Mali
Bangladesh	1994	Clinic, NGO	x	**$2.25**	x	x				$1.11		$1.17								(28)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Mali	1994	Clinic, satellite	x	**$2.23**	x	x				$2.00		$0.22								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Intr
Mali	2009	AMPFF (NGO) Facility	x	**$2.18**	x	x				$1.00	46%	$1.18	54%								Weissman E	2009	The Cost of Family Planning in Mali
Thailand	1991	Hospital	x	**$2.16**	x	x				$1.53		$0.62								(29)	Janowitz B, Kanch	1994	Introducing the Contraceptive Implant in
Bangladesh	1994	Clinic, NGO	x	**$2.05**	x	x				$1.11		$0.94								(28)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic, government	x	**$2.01**	x	x				$1.11		$0.89				$0.75				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic, government	x	**$1.99**	x	x		x		$1.12		$0.55				$0.32				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic, government	x	**$1.92**	x	x		x		$1.12		$0.51				$0.30				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic, government	x	**$1.89**	x	x				$1.11		$0.77				$0.65				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Thailand	1991	Hospital	x	**$1.84**	x	x				$1.53		$0.31								(29)	Janowitz B, Kanch	1994	Introducing the Contraceptive Implant in
Mali	2009	Govt Hospital	x	**$1.81**	x	x				$1.00	55%	$0.82	45%								Weissman E	2009	The Cost of Family Planning in Mali
Bangladesh	1994	Clinic, government	x	**$1.67**	x	x				$1.12		$0.55				$0.32				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic, government	x	**$1.63**	x	x				$1.12		$0.51				$0.30				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
Bangladesh	1994	Clinic	x	**$1.34**		x		x												(14)	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bang
Ethiopia	2009	Private Facility	x	**$1.33**	x	x				$1.14	86%	$0.19	14%								Weissman E	2009	The Cost of Family Planning in Ethiopia
Ethiopia	2009	Govt Health Center	x	**$1.31**	x	x				$1.14	87%	$0.17	13%								Weissman E	2009	The Cost of Family Planning in Ethiopia
Bangladesh	1994	CBD	x	**$0.75**		x			x											(14)	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bang
Bangladesh	1994	CBD	x	**$0.33**		x						$0.33								(28)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planning
AVERAGE	*xcluding USA*			**$3.36**						**$1.16**		**$1.70**				**$0.62**							

Including Indirect Cost

Country	Year	Delivery System/Provider	Direct cost Only	Incl Overhead cost	Average cost per visit/user (US$) 2010 $	Drugs & Supp.	Personnel	Fac. Overhead	Capital cost	Other	Drugs &l Supplies	% of Total Cost	(Direct) Labor Cost	% of Total Cost	Fac. Overhead	% of Total Cost	Capital Cost	% of Total Cost	Other	Comments		Title	Year	Title
Thailand	1989	Public sector		x	**$16.36**	x	x	x	x												(37)	Leoprapai, Boonle	1991	Cost of Public Family Planning Services a
Mexico	1996	Clinic, government		x	**$9.55**	x	x	x	x		$1.56										(20)	Hubacher D, Holt	1999	Increasing Efficiency to Meet Future Dem
Mexico	1996	Clinic, government		x	**$3.06**	x	x	x	x		$1.56										(20)	Hubacher D, Holt	1999	Increasing Efficiency to Meet Future Dem
Bangladesh	1994	Clinic, government		x	**$2.75**	x	x		x		$1.11		$0.89				$0.75				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic, government		x	**$2.53**	x	x		x		$1.11		$0.77				$0.65				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic, government		x	**$1.99**	x	x		x		$1.12		$0.55				$0.32				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic, government		x	**$1.92**	x	x		x		$1.12		$0.51				$0.30				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic		x	**$1.34**		x		x												(14)	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Ban
Bangladesh	1994	CBD		x	**$0.75**		x		x												(14)	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Ban
AVERAGE					**$4.47**						*Excluding USA*													

Direct Cost only

Country	Year	Delivery System/Provider	Direct cost Only	Incl Overhead cost	Average cost per visit/user (US$) 2010 $	Drugs & Supp.	Personnel	Fac. Overhead	Capital cost	Other	Drugs &l Supplies	% of Total Cost	(Direct) Labor Cost	% of Total Cost	Fac. Overhead	% of Total Cost	Capital Cost	% of Total Cost	Other	Comments		Title	Year	Title
Jordan	2009	Govt Hospital	x		**$8.03**	x	x				$1.03	13%	$7.00	87%								Weissman E	2009	The Cost of Family Planning in Jordan
Jordan	2009	Govt Health Center	x		**$8.03**	x	x				$1.03	13%	$7.00	87%								Weissman E	2009	The Cost of Family Planning in Jordan
Mexico	1995	Clinic	x		**$7.02**	x	x														(40)	Mitchell MD, Little	1999	Costing of Reproductive Health Services
Mali	1994	Clinic	x		**$5.09**	x	x				$3.69		$1.40								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Ir
Jordan	2009	JAFPP (NGO) Facility	x		**$4.27**	x	x				$1.03	24%	$3.24	76%								Weissman E	2009	The Cost of Family Planning in Jordan
Zimbabwe	1995	Clinic	x		**$3.77**	x	x														(40)	Mitchell MD, Little	1999	Costing of Reproductive Health Services
Kenya	2009	Govt Facility	x		**$3.76**	x	x				$1.29	34%	$2.47	66%								Weissman E	2009	The Cost of Family Planning in Kenya
Kenya	2009	NGO Facility	x		**$3.73**	x	x				$1.29	34%	$2.44	66%								Weissman E	2009	The Cost of Family Planning in Kenya
Zimbabwe	1998	Clinic	x		**$3.68**																(23)	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding
Jordan	2009	UNWRA Facility	x		**$3.38**	x	x				$1.03	30%	$2.36	70%								Weissman E	2009	The Cost of Family Planning in Jordan
Mali	1994	Clinic	x		**$2.54**	x	x				$2.35		$0.19								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Ir
Bangladesh	1994	Clinic, satellite	x		**$2.44**	x	x				$1.15		$1.29								(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Mali	1994	Clinic	x		**$2.39**	x	x				$2.27		$0.13								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Ir
Bangladesh	1994	Clinic, satellite	x		**$2.39**	x	x				$1.15		$1.24								(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Mali	2009	Govt Health Center	x		**$2.34**	x	x				$1.00	42%	$1.35	58%								Weissman E	2009	The Cost of Family Planning in Mali
Bangladesh	1994	Clinic, NGO	x		**$2.25**	x	x				$1.11		$1.17								(28)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Mali	1994	Clinic, satellite	x		**$2.23**	x	x				$2.00		$0.22								(13)	Doucoure A, Tand	1995	Programmatic Evaluation of Norplant Ir
Mali	2009	AMPFF (NGO) Facility	x		**$2.18**	x	x				$1.00	46%	$1.18	54%								Weissman E	2009	The Cost of Family Planning in Mali
Thailand	1991	Hospital	x		**$2.16**	x	x				$1.53		$0.62								(29)	Janowitz B, Kanch	1994	Introducing the Contraceptive Implant
Bangladesh	1994	Clinic, NGO	x		**$2.05**	x	x				$1.11		$0.94								(28)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic, government	x		**$2.01**	x	x				$1.11		$0.89				$0.75				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic, government	x		**$1.89**	x	x				$1.11		$0.77				$0.65				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Thailand	1991	Hospital	x		**$1.84**	x	x				$1.53		$0.31								(29)	Janowitz B, Kanch	1994	Introducing the Contraceptive Implant
Mali	2009	Govt Hospital	x		**$1.81**	x	x				$1.00	55%	$0.82	45%								Weissman E	2009	The Cost of Family Planning in Mali
Bangladesh	1994	Clinic, government	x		**$1.67**	x	x				$1.12		$0.55				$0.32				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Bangladesh	1994	Clinic, government	x		**$1.63**	x	x				$1.12		$0.51				$0.30				(27)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
Ethiopia	2009	Private Facility	x		**$1.33**	x	x				$1.14	86%	$0.19	14%								Weissman E	2009	The Cost of Family Planning in Ethiopia
Ethiopia	2009	Govt Health Center	x		**$1.31**	x	x				$1.14	87%	$0.17	13%								Weissman E	2009	The Cost of Family Planning in Ethiopia
Bangladesh	1994	CBD	x		**$0.33**		x						$0.33								(28)	Janowitz B, Jamil	1996	Productivity and Costs for Family Planni
AVERAGE					**$3.02**																			

III. Methodological Issues

An analysis of the cost results in more detail shows that costs for the same type of intervention often differed widely. Some of the variances could be explained by the different delivery systems used to provide services. Provision of oral contraceptives, for instance, tends to be costlier at the hospital level due to the high overhead of those facilities, less costly at clinics and least costly in social marketing programs. But even when unit costs were compared across the same methods and delivery channels, large difference remained due to the way the studies collected and calculated their cost data.

Differences in the methodologies used included:

1. Inclusion/Exclusion of different cost components
   Some studies included only direct costs of services, other included indirect costs such as facility-level overhead costs, still others added the costs of general program administration, training and IEC activities.
2. Varying methodologies for calculating personnel costs
   With family planning services often provided in an integrated setting together with maternal and child health interventions, there was a wide variety of methods used to estimate and allocate personnel cost to the family planning services being studied.
3. Varying methodologies for allocating indirect/overhead costs
   The same problem applied to overhead costs, which often accounted for large proportion of total costs of a service.
4. Inconsistent treatment of capital costs
   Capital costs, when included, were usually expressed in annual terms. They were often not comparable due to different assumptions as to the useful life of various types of capital goods. Some studies also included opportunity cost.
5. Treatment of "free" components
   Studies varied in their costing approached to donated, "free" good, mainly commodities. While some studies included their costs, others didn't.

The following paragraphs will look at these issues in some more detail.

Commodity Costs

Commodities typically costed in family planning cost studies include contraceptive commodities (condoms, pills, IUDs, etc.) as well as any medical supplies that might be required (gloves, antiseptics, etc.). The cost should not only include the purchasing price but also the cost of shipping, customs and any other costs incurred in getting the products to the place where they will be used.

Study findings

39 of the 52 studies reviewed included the cost of commodities. 14 studies did not include them - a handful excluded these costs based on the argument that the contraceptives were donated and thus did not constitute a cost to the program(references 1, 28, 36), two studies dealt with types of visits that only required medical supplies, no contraceptives (sterilization 8, IUD follow-up visit 16). Two studies did not include them as they dealt with natural family planning methods (15, 48)[14] and one study focused solely on labor costs (20). Most of the studies that included contraceptive costs also included the cost of medical supplies such as gloves, syringes (for injectables), pregnancy tests and antiseptics required to provide the different methods.

The most common sources of contraceptive prices quoted in the studies were:

a) Ministry of Health purchasing records
b) average prices currently paid by the government,
c) USAID/UNFPA supplied cost figures,
d) average units costs of contraceptives as procured by donor agencies during the year of the study(extracted from USAID's RH Interchange database),
e) cost to the National FP office,
f) Intl. Drug Price Indicator Guide

Of the studies that identified their contraceptives as donated, two did not cost them at all (1, 36), while several others costed them at the cost organization would have to pay to actually purchase them (USAID AND IPPF prices)

[14] *One of the studies on natural FP methods did, however, include the cost of supplies such as thermometers, instructional methods booklets and back-up methods.*

(9) or at the same cost as the portion of supplies that were purchased by the program (47). One study costed only duties and import expenses for its donated supplies (18).
The study that looked at the cost of IUD follow-up visits did not include the cost of IUDs but included cost of antibiotics, culture, X-ray, pregnancy test (average per visit)(16).

Most studies did not look at logistical or transport costs or did not explicitly mention them. One study did include custom duties and importation expenses (18). Another study doubled drug costs to account for transportation costs, spoilage and loss (27). Four studies done by USAID in 2009 added an additional 10 percent to the commodity costs to account for in-country transportation and distribution costs (49-52).

Service Provider/Labor Costs

Salaries and benefits usually represent the largest cost component of FP programs. In other primary health care programs, they typically represent from one-third to three quarters of the total program cost. [15]

As family planning services are usually provided through integrated MCH programs, it is often difficult to allocate labor cost to the FP program. Data on how much time providers spent on family planning can be assessed in many ways.

a) Retrospectively, through interviews with through interviews with providers or through self-administered questionnaires that focus on the number of hours spent on different tasks or the percentage distribution of time spent carrying out different activities. Problems with these approaches include recall problems and reluctance of health providers to admit that they are not always busy.
b) Prospectively, focusing either on clients or providers. An example of a client-focused approach is the patient flow analysis developed by the CDC, which measures duration of client contact with each clinic employee. This method has the disadvantage that it does not provide any information on time not spent with clients. Approaches focused on providers include time-use logs or complex time-motion studies - the former again suffering from the problem that workers are unlikely to admit that they are not always busy, the second being prohibitively expensive.

Study findings
Almost all studies in the review included labor costs.
Salaries usually included benefits such as holiday, vacation, sick pay. A study on a CBD program covered in-kind payments (uniforms, bags, metal boxes, umbrellas)(20). Another costed instructors'/distributors' wages and benefits, travel and per diem expenses. Labor cost in a study of a social marketing program consisted of the fixed cost paid to the wholesellers selling the contraceptives to pharmacies.

Most studies used minutes of time spent by providers with a client as the basis for their cost calculations. Some studies only measured the time the provider actually spent with the client, while other studies also included preparation and clean-up time as well as time spent on recordkeeping (24,33). The focus in most cases was on the time spent by doctors and nurses, but some studies also included receptionists and other clinical staff such as lab technicians and pharmacists.

The assessment of one study (8 minutes of a physician's, 6 min. of a nurse's and 2 minute of a receptionist's time for a visit) was representative of many studies. One study allocated 45 minutes of an ObGyn or nurse's time for 1 CYP using pills, 30 minutes using condoms and 1 hour for IUDs and injectables.

How much time providers spent with their clients was assessed through:
a) provider interview and observation (49-52),
b) measured by survey staff (6)
c) time-motion study (42)
d) timesheets filled in by clinic workers ((43)
d) Logbooks filled in by clinic and field workers and observation (21)
e) Patient Flow Analysis (PFA) – one study (4).

The obtained times were then usually multiplied by a "salary cost per minute" which was defined differently in different studies. Often the study did not specify how that salary cost per minute was calculated. Most studies that used the "number of minutes per visit" approach and provided detail on the methodology they used divided total annual salaries and benefits by total minutes spent on client contact to obtain a "cost per minute of client contact" which was then multiplied by the number of minutes to obtain the cost per visit (7, 17, 21, 49-52). Several studies simply divided total salaries by total minutes worked to get a salary cost per minute (4). One study explicitly stated

[15] *Janowitz, B. Methods for* Costing Family Planning *Services.*

that it was assumed there was no downtime and that staff was working 8 hours a day, which in almost any setting seems rather unrealistic (40).

This second approach ignores the problem that service providers do not actually spent their entire work day actively dealing with clients and that much time is spent waiting for clients, preparing, cleaning up or keeping records, eating lunch, attending meetings and other non-client related activities.

There were several approaches used to deal with the down-time and time not spent on client contact issue:

a) The approach described above using a "salary cost per minute of client contact" which assigns a share of the downtime cost to a specific visit based on its duration.
b) Specific analyses of provider time spent on indirect service activities (recordkeeping, travel for home visits, preparatory activities, attending training etc.) and unoccupied time (resting, eating, waiting for clients) overall compared to time spent on client contact. Assignment of these costs to different visits based either on length of the visits or on the share of provider cost (visits that require higher qualified , more expensive staff would get assigned a higher portion of the down-time cost) (4, 30, 42).
c) Salaries as fixed costs.
In this case total salary cost are usually simply divided by the number of visits like in the CBD study in which salary cost per agent were divided by the number of visits that agent was handling in a year. More sophisticated approached took into consideration the different length of visits when assigning these costs (20, 31).

Overhead Costs

Study findings

30 of the 52 studies included some type of overhead. Three main types of overhead costs were identified - facility overhead (water, electricity, security), cost of clinical support, administrative and supervisory staff and office costs.

Facility overhead was the most common overhead cost included, with the main costs included in this category utilities, maintenance and repair, housekeeping and, in some cases, security. Administrative and support staff typically included a) support staff at the clinical facility, in fewer cases b) admin and supervisor staff at district and/or provincial level. In a CBD program it included the driver and an animatrice. Office costs (included in few studies) consisted of office rent, telephone, fax, water, printing costs, etc.

Rent was included in a small number of studies, in many cases it was captured under annualized capital/building costs.

One study simply assumed overhead costs to be 20% on top of direct costs (20).

Allocation to FP/visits was done using numerous different ways:

a) by dividing annual costs by number of visits(4, 40),
b) by allocating total costs in proportion to clinical provider costs (37),
c) by allocating costs based "on relative effort devoted" to each service (41). This was similar to a methodology developed in a MEXFAM study where a higher % of the indirect costs were allocated to services that require more support, i.e. surgical procedures bear higher % of costs than routine FP or RH visit (33).
d) weighted by averaged duration of client contact of the different visits (5),
e) according to % of total service time spent on each type of service by the service provider (30),
f) "determined through interviews with knowledgeable staff" (9),
g) One study allocated support staff salaries among the facility's health care providers, giving each an equal share (17). That cost was then assigned to FP visits according to length of each type of visit
h) Utilities, maintenance and repairs were often allocated based on proportion of space devoted to services (35, 37).

Capital Costs

Capital goods are defined as items that have a useful life of more than one year. Because a capital good can last for several years, its purchase price is not equal to its cost. Rather, the true cost of capital needs to be spread out (annualized) over the useful life of the item.

In addition to depreciation, economists recommend to also include the opportunity cost of capital as the money used to purchase a particular capital items such as a building or vehicle could have been used for other productive purposes (at minimum, it could have been earning interest in a savings account).

Study findings
19 of the 52 studies reviewed explicitly mentioned the inclusion of capital costs but in most cases did not provide enough specific detail to allow the reader to figure out what capital costs were included or what methodologies were used.

Most studies did annualize capital costs but assumptions regarding the useful life of different capital items varied widely. Useful life assumptions for buildings ranged between 10 and 50 years (usually 20-30 years). Equipment was usually written off over 10 years, with some studies differentiating between different types of equipment (e.g., 10 years for steel equipment, 5 year for plastic, wood and electrical appliances – 39). One study used 30 years (4), another 3 years (9). Furniture, when included, was usually depreciated over 10 years, vehicles over 7 years.

Opportunity cost were included in only a handful of studies (2,4,5,22). Discount rates (or the annual interest rate which the money invested was assumed to have yielded if invested elsewhere) ranged from 5 to 15%.

Several studies that compared the cost of different methods or facilities did not include capital costs as they were assumed to be the same for the different methods/facilities studied (30).

Capital costs were allocated to specific family planning visits/methods
a) based on total number of visits (4,17,
b) weighted by average time spent per visit/method (5,6,
c) (for sterilizations) based on proportion operating room was used for the procedure(39),
d) (for equipment) divided by number of uses (27)
e) Proportional to salary costs (43)

Training, IEC and Other

Study findings
a) Training
12 studies explicitly mention the inclusion of training cost. Usually studies did not include details on the methodology used, but where mentioned, costs were usually annualized over different number of years (usually in the 5 to 15 year range). The annualized costs were then allocated to the different methods either using number of annual visits (20) or weighted by average duration of client contact per method.
One study on a SM program did not include the training of pharmacists because it was not considered part of the regular program (47)

b) IEC
Types of IEC activities included:
a) CBDs – cost of promotional activities, brochures and manuals for the distributors
b) Education outreach expense
c) CSM – cost of subcontracts for promotion and publicity
No information on how cost were allocated was given except for one study on IUDs which stated that cost of health promotion sections of the hospitals and health centers were first allocated to FP based on number of days spent per week on FP (1/5 and 1/10, respectively), then allocated to IUDs based on % of time spent on IUDs compared to all FP methods provided (45).

c) Patient costs
Three studies included patient costs (usually reported separately from provider costs) (7,30,45). Generally these included transportation costs and wait time, costed at minimum wage (7,30). One study also included user charges at hospital level (45).

Donated Goods

Many family planning programs receive donated inputs such as donated contraceptives, volunteer labor and donated foreign technical assistance. If they are critical for program survival they need to be costed.

Study findings
Donated supplies and, to a lesser extent, labor, were mentioned in about a dozen studies.
- 1 study : Contraceptives supplies donated but costed at cost organization would have to pay to actually purchase them (USAID AND IPPF prices, 9)
- Contraceptives and supplies costed based on MoH purchasing records, donated supplies costed at the same prices (17)

- Cost as purchased directly by PROFAMILA or through IPPF + custom duties and importation expenses. In case of donated contraceptives, only consideration of duties and import expenses (18).
- Several studies simply excluded the cost of donated supplies (1, 28, 36).

CYP and Visit Assumptions

Cost per CYP estimates were affected by the same issues. In addition cost estimates differed due to different assumptions regarding the number of years of protection provided by specific methods and, in bottom-up calculations where costs were calculated by adding up the number of visits required over the use of the method, by the number of visits that were assumed to be required to provide one CYP.

Contraceptives required per CYP

The quantities of required commodities are usually calculated based on the number of units required to provide one year of protection taking into account factors such as failure rates and wastage. The data suggested by USAID shown below factor in that condoms and oral contraceptives, for example, may be used incorrectly and then discarded, or that IUDs and implants may be removed before their life span is realized.

USAID Recommended CYP by Method

Method	CYP Per Unit
Oral Contraceptives	15 cycles per CYP
Condoms	120 units per CYP
Female Condoms	120 units per CYP
Vaginal Foaming Tablets	120 units per CYP
Depo Provera Injectable	4 doses (ml) per CYP
Noristerat Injectable	6 doses per CYP
Cyclofem Monthly Injectable	13 doses per CYP
Copper-T 380-A IUD	3.5 CYP per IUD inserted
Norplant Implant	3.5 CYP per Implant
Implanon Implant	2.0 CYP per Implant
Jadelle Implant	3.5 CYP per Implant
Emergency Contraceptive Pills	20 doses per CYP
Natural Family Planning (i.e. Standard Days Method)	2 CYP per trained, confirmed adopter
Lactational Amenorrhea Method (LAM)	4 active users per CYP (or .25 CYP per user)
Sterilization (male & female)*	
- Asia	10 CYP
- Latin America	10 CYP
- Africa	8 CYP
- Near East/North Africa	8 CYP

***The CYP conversion factor for sterilization varies because it depends on when the sterilization is performed in the reproductive life of the individual. For more specific data on CYPs and sterilization, consult with national DHS and CDC reproductive health survey records which may provide a historical calculation based on a specific country's context.**

Source: http://www.usaid.gov/our_work/global_health/pop/techareas/cyp.html

Study findings

The number of units required for one CYP differed widely throughout the studies with some methods such as condoms showing larger variations than others. For pills, most studies assumed 13 cycles (3,10,17,31,32,50-53), one assumed 12 (41), one 14 (17) and two studies 15 cycles (38, 44). For condoms, required quantities ranged from 80 (38) to 100 (most common) to 150 condoms per year. One study (3) differentiated between condoms purchased by the user and those given to the user for free. While 100 condoms were expected to be sufficient per CYP for the purchased condoms, wastage was assumed to be larger for the others, requiring 150 condoms per year for effective protection.

For 3-month injectables, which are generally administered by health staff and thus do not allow for user error, the assumptions were consistent across studies (4 per CYP).

The expected length of use (and protection) for IUDs and implants was between 2 and 3.5 years. One study (38) which based its estimate on user interviews used 4.3 years for implants and 6 years IUDs.

The protective effect of sterilization was usually calculated based on the difference between the average age at acceptance and age 45, at which point women are assumed to reach the end of their fertile period. Values range thus from 10 to 12.5 years

Number of visits required per CYP

In most cases, studies in this review calculated total cost per CYP by adding up the costs incurred at initial/acceptance visit, follow-up visit(s) and removal visit (where indicated) over the length of method use, then dividing that cost by the number of CYPs provided by the method. While most methods incur an initial visit and in the case of IUDs, and implants a removal visit, the number of follow-up visits is highly variable and setting-specific (depending not only on the recommended visit schedule but also on the compliance with these recommendations (usually low for FS and IUDs).

Study findings

Only a few studies provided detailed descriptions on how they arrived at the cost per CYP based on visit cost data (17,21,24,50-53). The number of visits costed was either based on national clinical guidelines or actual observed behavior (examination of hospital records).

For sterilizations, the initial visit usually included the actual procedure, and there was one follow-up visit. For IUDs and implants, most studies costed an initial visit (at which the contraceptive was inserted), a removal visit and 1-2 follow-ups over the length of the use of those contraceptives. For pills and condoms , some countries required and costed monthly follow-ups (17, 51-53), one assumed bi-monthly visits (17) and one 4 visit per year (50).

Discussion

Most of the reviewed studies were rather vague when it came to explaining what costs they exactly included and what methodologies they used to assess, estimate and allocate theses costs, making their results essentially unusable outside of the specific study context and sometimes questionable even for the actual study purpose.

There is no perfect way to do a cost study as certain considerations (like the type of costs that need to be included or whether a study should use total or marginal costs or a bottom-up or top-down approach) are driven by the purpose of the study. Including more costs does not necessarily make a study any better or more useful as the quality of the cost estimates tends to go down the more information is included. The findings of the review do, though, point to the need for more discussion and clarification of some issues where there currently do not seem to exist consistent guidelines or recommendations :

1. Varying methodology for calculating personnel costs, in particular service provider cost
   There are several acceptable methods, either using a salaries as fixed costs approach or an approach that measures the time spent with the client on a certain type of visit/procedure and then somehow accounts for downtime and other time not spent with a client. A large number of studies seemed to use only client contact time while any downtime was ignored and/or allocated to other programs which is a questionable approach. Clearer guidelines on how to deal with personnel costs might be useful for authors of future studies.
2. It is probably not possible to come up with iron clad allocation rules for overhead and capital costs (allocated to number of visits/time spent on certain procedures/floor space, etc.) as circumstances are different and data availability is often limited. For capital costs, though, it should be possible to come up with a more standardized set of rules regarding expected lifespan of the different capital items.
3. It might be worth having a discussion about the inclusion of opportunity costs on capital items. Very few studies included them and the assumptions on the rate of interest that could have been achieved by investing money elsewhere often seemed rather outlandish.

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Annexes

Annex Table 1: Types of Costs Included

						Costs included						
	Author	Year	Title	Country	Costs Included	Contraceptives	Supplies	Personnel	facility)	Capital Cost	Training	Other
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	Commodity costs excluded (donated)			x				
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	Costs of personnel, medicines and supplies, equipment and buildings only. IEC only sterilization portion. Program overhead estimated at 20%, but no data presented to support that estimate.	x	x	x	x	x		x
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	Total program expenditure divided by number of CYP provided. Actual expenditure data used where available, otherwise budget figures. Costs include cost of international donor agencies and local govrnments.	x	x	x	x	x	x	x
4	Boateng J. et al.	2006	Costs of Reproductive Health Services Provided by Four CHAG Hospitals	Ghana	Supplies (not contraceptives), salaries of service providers, support staff and admin staff Office supplies, clinic rent, utilities, annualized equipment and furniture. Contraceptives excluded.		x	x	x	x		
5	Bratt JH, Suazo M and Santos H.	1993	Costs of Family Planning Services Delivered Through ASHONPLAFA Programs: Final Report.	Honduras	Costs categorized as visit-specific (contraceptives) and joint costs (provider and support staff salaries, CBD education activities). In addition, facility overhead, annualized equipment and furniture, ASHONPLAFA program administration cost.	x	x	x	x	x		x
6	Çakir HV, Fabrikant SJ & Kircalioglu FN.	1996	Comparative Costs of Family Planning Services and Hospital-based Maternity Care in Turkey.	Turkey	Commodities, salaries for all staff associated with FP program, clinic operating costs + capital costs	x	x	x	x			
7	Castillo S, Mazariegos C, Barrios CL et al.	1998	Cost Analysis of Reproductive Health Services Provided by the Ministry of Health, Guatemala. Final Technical Report.	Guatemala	Supplies, salaries of providers and admin personnel. Facility maintenance and fuel. Also included - patient costs (shown separately)	x	x	x	x			x
8	Castro R. and Nelson AG.	1985	Estudio de Costos Quirugicos. Bogota: Association for Voluntary Surgical Contraception.	Colombia	Supplies (no contraceptives since sterizliations), salaries of providers and admin staff, operating equipment, utilities, washing and sterilization, depreciation, education materials		x	x	x			x
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	Contraceptives, allowances of CBD workers, program managers, supervisors and support staff Fuel, transportation, annualized cost of buildings, equipment, furniture, vehicles	x	x	x	x	x	x	
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	Contraceptives + suppllies, salaries of service providers, fuel, vehicle repair and maintenanvce+educational expenses. No capital costs	x	x	x	x			x
11	Doucoure A, Tandia D, Sangare M, Katz K.	1995	Programmatic Evaluation of Norplant Introduction in Mali.	Mali	Direct costs only (contraceptives, supplies + provider time)	x	x	x				
12	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bangladesh.	Bangladesh	Service provider cost + administrative overhead. Cost of contraceptiives excluded.			x	x			

						Costs included						
	Author	Year	Title	Country	Costs Included	Contraceptives	Supplies	Personnel	facility)	Capital Cost	Training	Other
13	Foreit KG	2002	Broadening Commercial Sector Participation in Reproductive Health. The Role of the Public Sector Prices on Markets for Oral Contraceptives. Technical Paper Series No. 3	Bangladesh	Contraceptives only	x						
14	Foreit KG, Foreit JR, Lagos G & Guzman A.	1993	Effectiveness and cost-effectiveness of post-partum IUD insertion in Lima, Peru.	Peru	Start-up (initial training) and operating costs (IUDs and supplies). Labor cost explicitly excluded.	x	x		x		x	
15	Gray RH et al.	1993	Evaluation of natural family planning programmes in Liberia and Zambia.	Liberia	Total program costs			x	x		x	
16	Hubacher D, Cardenas C, Hernandez D, Cortes M., Janowitz B.	1999	The Costs and Benefits of IUD Follow-Up Visits In the Mexican Social Security Institute	Mexico	Cost of follow-up visit so IUD not included. Direct cost only, no overhead.		x	x				
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Cost of service provision only - labor, capital and supplies.	x	x	x		x		
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	Contraceptives, provider salaries, admin personnel share, maintennace, travel, rent + evaluation costs	x		x	x			x
19	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding Services - Zimbabwe	Zimbabwe	Supplies and provider time. Cost of contraceptives not included.	x	x	x				
20	Janowitz B, Chege J, Thompson A, Rutenberg N & Homan R.	2000	Community-Based Distribution in Tanzania: Costs and Impacts of Alternative Strategies To Improve Worker Performance.	Tanzania	Focus on service provider costs (salaries + training costs), cost of contraceptives excluded.			x	x		x	
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	Contraceptives, labor costs (providers + supervisors) plus unspecified capital costs.	x	x	x		x		
22	Janowitz B, Jamil K, Chowdhury J, Rahman B and Hubacher D.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program.	Bangladesh	CHECK	x	x	x		x		
23	Janowitz B, Jamil K, Chowdhury J, Rahman B, and Holtman M.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program.	Bangladesh	CHECK	x	x	x		x		
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Direct costs only (contraceptives, supplies + provider time)	x	x	x				
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	Commodities, sales commission of distributors, salaries and transportation costs of supervisors, promotional materials, and ASHONPLAFA indirect costs	x		x	x			x

						Costs included						
	Author	Year	Title	Country	Costs Included	Contraceptives	Supplies	Personnel	facility)	Capital Cost	Training	Other
26	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	Only personnel-related costs (payments to field agents and supervisors + training costs)			x			x	
27	Jha P, Bangoura O, Ranson K.	1998	The cost-effectiveness of forty health interventions in Guinea.	Guinea	Drugs, salaries/benefits of providers, share of national salary budget, investment budget and administrative budget.	x	x	x		x		x
28	Kimunya, A.	1996	Cost Effectiveness Analysis of FPPS Clinics.	Kenya				x	x			
29	Leoprapai, Boonlert, Chalongphop Susangkran, et al.	1991	Cost of Public Family Planning Services and Scope of Private Sector Provisions.	Thailand		x	x	x	x	x		
30	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Drugs, provider salaries, supervisory and support salaries, building maintenance and supplies. No capital cost. Includes patient costs (travel and wait time)	x	x	x	x			x
31	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	Contraceptives, salaries of provincial level staff (not of distribution agents?), transportation costs (bicycles, motorcycles and transportation allowance for supervisors), annualized training costs	x		x	x		x	
32	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	All direct surgery costs, plus some indirect project costs. Not clear whether APROFAM program costs included	x	x	x	x	x		
33	Mitchell MD, Littlefield J & Gutter S.	1999	Costing of Reproductive Health Services.	Zimbabwe + Mexico	Drugs, supplies, indirect costs (not specified). No capital cost.	x	x	x	x			
34	Moreland S.	2000	How Much Will It Cost to Achieve Egypt's Population Goals?	Egypt	Contraceptives, all costs of service providers and support agencies.	x	x	x	x	x	x	x
35	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	Drugs, provider salaries. Operating costs, utilities, buildings, transport	x	x	x	x	x		x
36	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	Commodity costs excluded (donated)							
37	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Isalmic Republic of Iran	Iran (Islamic Republic of)	Contraceptives, supplies, provider salaries, admin and supervisory staff at district level, facility overhead - utilities and cleaning (not rent)	x	x	x	x			
38	Nortman D	1989	A cost-benefit analysis of the Mexican Social Security Administration's family planning program	Mexico	Top-down, includes everything	x	x	x	x	x	x	x
39	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	Direct surgery cost + "investment costs"- actual cost of buildings, equipment and training. No separate layer of administrative or other indirect costs	x	x	x		x	x	
40	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public	Kazakhstan	Contraceptives, supplies, utility and overhead costs (not specified what inlucded in that last category)	x	x	x	x			

						Costs included						
	Author	Year	Title	Country	Costs Included	Contraceptives	Supplies	Personnel	facility)	Capital Cost	Training	Other
			Financial Cost									
41	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	Top-down, including everything including central admin cost share	x		x	x			x
42	Routh S, Thwin AA, Barb N, Begum A.	2004	Cost efficiency in MCHFP Service Delivery in Bangladesh	Bangladesh	Contraceptives, supplies, rent, utilities, maintenance, repair and supplies	x	x	x	x			
43	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	Top-down study, staff salaries, office rent and equipment, training workshops			x	x	x	x	
44	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	Contraceptives, direct labor costs, facility overhead, SOMARC overall management costs, ocnsultant travel	x		x	x	x	x	x
45	Tangcharoensathien V, Suthivisessak P et al.	1990	Intrauterine contraceptive devices: comparing health centre and district hospital costs in Thailand.	Thailand	IUDs, provider costs, building and fixed asset costs plus UD share of health promotion costs. Also included (hospitals only); user charges.	x		x		x		x
46	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya								
47	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	Wages and benefits, travel and perdiem, IEC materials, contraceptives and depreciation of capital items. No separate level of administrative costs included.	x		x				x
48	Vernon R, Rocuts K and Medina JE.	1987	The Provision of Natural Family Planning Services at Public Health Centers in Colombia.	Colombia	Direct costs only: Supplies + provider time spent		x	x				
49	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	Direct costs only (contraceptives, supplies and provider time)	x	x	x				
50	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	Direct costs only (contraceptives, supplies and provider time)	x	x	x				
51	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	Direct costs only (contraceptives, supplies and provider time)	x	x	x				
52	Weissman E (4)	2009	The Cost of Family Planning in Kenya	Kenya	Direct costs only (contraceptives, supplies and provider time)	x	x	x				

Annex Table 2: Commodity Costs

	Author	Year	Title	Country	Commodity Costs
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	Donated commodities not included
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	Medicines and supplies
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	Contraceptives
4	Boateng J. et al.	2006	Costs of Reproductive Health Services Provided by Four CHAG Hospitals	Ghana	Contraceptives not costed (no reason given), other medical supplies costed at purchasing cost
5	Bratt JH, Suazo M and Santos H.	1993	Costs of Family Planning Services Delivered Through ASHONPLAFA Programs: Final Report.	Honduras	Called "Visit-specific Cost"
6	Çakir HV, Fabrikant SJ & Kircalioglu FN.	1996	Comparative Costs of Family Planning Services and Hospital-based Maternity Care in Turkey.	Turkey	Commodities + expendable supplies based on stores' records and USAID-supplied cost figures
7	Castillo S, Mazariegos C, Barrios CL et al.	1998	Cost Analysis of Reproductive Health Services Provided by the Ministry of Health, Guatemala. Final Technical Report.	Guatemala	Drugs and supplies
8	Castro R. and Nelson AG.	1985	Estudio de Costos Quirugicos. Bogota: Association for Voluntary Surgical Contraception.	Colombia	Medications Sterilizations, so no contraceptive costs
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	Contraceptives supplies donated but costed at cost organization would have to pay to actually purchase them (USAID AND IPPF prices)
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	Cost of contraceptives to the National FP Office, TL including anesthesia and supplies
11	Doucoure A, Tandia D, Sangare M, Katz K.	1995	Programmatic Evaluation of Norplant Introduction in Mali.	Mali	Price paid by USAID for implant + Supplies
12	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bangladesh.	Bangladesh	Excluded
13	Foreit KG	2002	Broadening Commercial Sector Participation in Reproductive Health. The Role of the Public Sector Prices on Markets for Oral Contraceptives. Technical Paper Series No. 3	Bangladesh	Contraceptive costs only
14	Foreit KG, Foreit JR, Lagos G & Guzman A.	1993	Effectiveness and cost-effectiveness of post-partum IUD insertion in Lima, Peru.	Peru	IUD and supplies
15	Gray RH et al.	1993	Evaluation of natural family planning programmes in Liberia and Zambia.	Liberia	No contraceptive costs - natural methods
16	Hubacher D, Cardenas C, Hernandez D, Cortes M., Janowitz B.	1999	The Costs and Benefits of IUD Follow-Up Visits In the Mexican Social Security Institute	Mexico	Study on IUD follow-up visits, so IUD cost not included Included: cost of antibiotics, culture, X-ray, pregnancy test (average per visit)
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Contraceptives and supplies costed based on MoH purchasing records, donated supplies costed at the same prices 13 cycles of pills, 105 condoms, 12.6 1-month injections per CYP, IUD and supplies required for sterilizations
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	Cost as purchased directlty by PROFAMILA or through IPPF + custom duties and importaation expenses. In case of donated contraceptives, only consideration of duties and import expenses.
19	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding Services - Zimbabwe	Zimbabwe	Gloves and contraceptives

	Author	Year	Title	Country	Commodity Costs
20	Janowitz B, Chege J, Thompson A, Rutenberg N & Homan R.	2000	Community-Based Distribution in Tanzania: Costs and Impacts of Alternative Strategies To Improve Worker Performance.	Tanzania	Excluded
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	Price of contraceptives from USAID/UNFPA
22	Janowitz B, Jamil K, Chowdhury J, Rahman B and Hubacher D.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program.	Bangladesh	
23	Janowitz B, Jamil K, Chowdhury J, Rahman B, and Holtman M.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program.	Bangladesh	Commodities + supplies
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Cost of implants + supplies for insertion and removal
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	CBD - commodity costs CSM - commodity and packaging costs
26	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	
27	Jha P, Bangoura O, Ranson K.	1998	The cost-effectiveness of forty health interventions in Guinea.	Guinea	Drug costs times 2 to account for transportation costs, spoilage and loss.
28	Kimunya, A.	1996	Cost Effectiveness Analysis of FPPS Clinics.	Kenya	Contracptive cost excluded
29	Leoprapai, Boonlert, Chalongphop Susangkran, et al.	1991	Cost of Public Family Planning Services and Scope of Private Sector Provisions.	Thailand	Included.
30	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Drugs and contraceptives
31	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	Pills and condoms - cost to donors of purchaisng contraceptievs and shipment costs to Zimbabwe (not within country).
32	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	All drugs and supplies
33	Mitchell MD, Littlefield J & Gutter S.	1999	Costing of Reproductive Health Services.	Zimbabwe + Mexico	Identification of supplies used for each intervention. Drugs priced according to Intl. Drug Price Indicator Guide. Supply costs from Purchasing Department
34	Moreland S.	2000	How Much Will It Cost to Achieve Egypt's Population Goals?	Egypt	International unit cost estimates, requirements based on USAID estimates per CYP
35	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	Drugs, lab tests and other medical supplies
36	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	Donated commodities not included
37	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Isalmic Republic of Iran	Iran (Islamic Republic of)	Contraceptives and supplies. Costs obtained from MoH and Medcial Education purchase orders.
38	Nortman D	1989	A cost-benefit analysis of the Mexican Social Security Administration's family planning program	Mexico	Included

	Author	Year	Title	Country	Commodity Costs
39	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	Drugs and supplies
40	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public Financial Cost	Kazakhstan	Contraceptives + disposable supplies (gloves, antiseptics, lab tests)
41	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	
42	Routh S, Thwin AA, Barb N, Begum A.	2004	Cost efficiency in MCHFP Service Delivery in Bangladesh	Bangladesh	Contraceptives + medical supplies
43	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	
44	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	Contraceptive cost included, logistical or transport costs excluded
45	Tangcharoensathien V, Suthivisessak P et al.	1990	Intrauterine contraceptive devices: comparing health centre and district hospital costs in Thailand.	Thailand	IUDs
46	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya	
47	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	Commodities for both CSM and CBD program Article mentions that some contracepties were donated but while not explicitly stated, iit appears they all were costed at regular prices.
48	Vernon R, Rocuts K and Medina JE.	1987	The Provision of Natural Family Planning Services at Public Health Centers in Colombia.	Colombia	Natural methods so only: Thermometers, instructional booklets, back up methods
49	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	Commodity costs used for the cost calculations were based on the average prices currently paid by the government of Jordan. Also included were costs of supplies such as gloves, syringes (for injectables), pregnancy tests and antiseptics required to provide the different methods. An additional 10 percent was added to account for in-country transportation and distribution costs.
50	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	Contraceptives as well as supplies such as gloves, syringes (for injectables), pregnancy tests and antiseptics required to provide the different methods. Costed based on the average units costs of contraceptives as procured by donor agencies for Mali in 2008 (extracted from USAID's RH Interchange database) An additional 10 percent was added to account for in-country transportation and distribution costs.
51	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	Contraceptives as well as supplies such as gloves, syringes (for injectables), pregnancy tests and antiseptics required to provide the different methods. Costed based on the average units costs of contraceptives as procured by donor agencies for Ethiopia in 2008 (extracted from USAID's RH Interchange database) An additional 10 percent was added to account for in-country transportation and distribution costs.

	Author	Year	Title	Country	Commodity Costs
52	Weissman E (4)	2009	The Cost of Family Planning in Kenya	Kenya	Contraceptives as well as supplies such as gloves, syringes (for injectables), pregnancy tests and antiseptics required to provide the different methods. Costed based on the average units costs of contraceptives as procured by donor agencies for Kenya in 2008 (extracted from USAID's RH Interchange database) An additional 10 percent was added to account for in-country transportation and distribution costs.

Table 3: Service Provider/Labor Cost

	Author	Year	Title	Country	Service Provider/Labor Cost
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	Estimates of % of time spent per week on sterilization - 10% for physician, 20% each for FP visitors and ward attendants. Because staff are assigned fulltime to steriliztaion during fixed hours, staff cost incurred regardless of number of procedures.
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	Salaries and other personnel costs. Excluded: volunteer labor
4	Boateng J. et al.	2006	Costs of Reproductive Health Services Provided by Four CHAG Hospitals	Ghana	Patient Flow Analysis (PFA) was used to document personnel utilization Salaries + Personnel emoluments 1. Direct labor cost - number of minutes of client contact x annual salary/work days x minutes 2. Indirect labor cost - all time not spent on client contact allocated in proportion to direct labor cost
5	Bratt JH, Suazo M and Santos H.	1993	Costs of Family Planning Services Delivered Through ASHONPLAFA Programs: Final Report.	Honduras	Salaries included in the category "Joint Cost" 2-step process: a) Identification of all joint costs, grouping by cost center (reception, waiting room, exam and operating room, lab, etc.) b) Allocation of total monthly cost of each cost center to client visits based on average duration of client contact.
6	Çakir HV, Fabrikant SJ & Kircalioglu FN.	1996	Comparative Costs of Family Planning Services and Hospital-based Maternity Care in Turkey.	Turkey	Gross salaries+fringe benefits for all staff associated with FP program, multiplied by actual time spent per case as measured by survey staff.
7	Castillo S, Mazariegos C, Barrios CL et al.	1998	Cost Analysis of Reproductive Health Services Provided by the Ministry of Health, Guatemala. Final Technical Report.	Guatemala	Salaries and benefits of medical staff divided by annual number of minutes spent on client contact x number of minutes per visit
8	Castro R. and Nelson AG.	1985	Estudio de Costos Quirugicos. Bogota: Association for Voluntary Surgical Contraception.	Colombia	Salaries + Honoraria
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	Remuneration (allowances and salaries) of CBD agents
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	12 months of salary + benefits for midwife, nurses assistant(s), driver, animatrice
11	Doucoure A, Tandia D, Sangare M, Katz K.	1995	Programmatic Evaluation of Norplant Introduction in Mali.	Mali	Minutes spent with provider (9 min) x salary per minute Not specified how cost of provider minute was calculated
12	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bangladesh.	Bangladesh	Labor
13	Foreit KG	2002	Broadening Commercial Sector Participation in Reproductive Health. The Role of the Public Sector Prices on Markets for Oral Contraceptives. Technical Paper Series No. 3	Bangladesh	Not included
14	Foreit KG, Foreit JR, Lagos G & Guzman A.	1993	Effectiveness and cost-effectiveness of post-partum IUD insertion in Lima, Peru.	Peru	Excluded since it was assumed that no extra labor costs would be incurred for this procedure.
15	Gray RH et al.	1993	Evaluation of natural family planning programmes in Liberia and Zambia.	Liberia	No detail given, but included

	Author	Year	Title	Country	Service Provider/Labor Cost
16	Hubacher D, Cardenas C, Hernandez D, Cortes M., Janowitz B.	1999	The Costs and Benefits of IUD Follow-Up Visits In the Mexican Social Security Institute	Mexico	Costed - Time of providers spent on service (8 minutes of a physician's, 6 min. of a nurse's and 2 minute of a receptionist's time)
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Cost per minute calculated by dividing monthly cost by total number of minutes spent interacting with clients (cost per minute then inflated to account for preparation cost etc.) Multiplied by minutes per visit to get labor cost per visit
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	Salaries paid to FP staff
19	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding Services - Zimbabwe	Zimbabwe	Provider time
20	Janowitz B, Chege J, Thompson A, Rutenberg N & Homan R.	2000	Community-Based Distribution in Tanzania: Costs and Impacts of Alternative Strategies To Improve Worker Performance.	Tanzania	Salaries, benefits and in-kind payments (uniforms, bags, metal boxes, umbrellas) to fieldworkers divided by number of visits per agent
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	Logbooks and observation to determine time use of clinic and field workers (client contact, report writing and meetings and un-/authorized absence) Monthly labor cost divided by total number of minutes spent on client contact/field visits
22	Janowitz B, Jamil K, Chowdhury J, Rahman B and Hubacher D.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program.	Bangladesh	Labor cost only Fieldworker and FPI (supervisor?)
23	Janowitz B, Jamil K, Chowdhury J, Rahman B, and Holtman M.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program.	Bangladesh	3 to 8 minutes per visit type
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Minutes spent with patient + preparation and cleanup x salary cost per minute. Not specified how cost per minute of provider time was calculated (downtime, etc)
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	CBD - Sales commission of distributors CSM - none
26	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	Payments to field agents
27	Jha P, Bangoura O, Ranson K.	1998	The cost-effectiveness of forty health interventions in Guinea.	Guinea	Official salary + 40% add-on for pension benefits + 50% to account for poor workforce planning and other inefficiencies.
28	Kimunya, A.	1996	Cost Effectiveness Analysis of FPPS Clinics.	Kenya	Costs distributed across types of visits according to the providers' estimates of time spent and materials used. Cost per visit includes both direct and indirect costs, but no discussion of whether time estimates included non-client contact time.
29	Leoprapai, Boonlert, Chalongphop Susangkran, et al.	1991	Cost of Public Family Planning Services and Scope of Private Sector Provisions.	Thailand	Included.
30	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Salaries + Benefits Determination of time spent through observations and logbook ananaysis Time spent on recordkeeping, preparation, downtime, meetings, etc. allocated to different interventions based on time spent on each type of service by service provider

	Author	Year	Title	Country	Service Provider/Labor Cost
31	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	Salaries and benefits of all provincial level staff(not field agents?unpaid?) divided by number of visits/CYP
32	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	Program expenditures on slaraies and benefits, unclear whether staff performed other functions when steriilization demand was low.
33	Mitchell MD, Littlefield J & Gutter S.	1999	Costing of Reproductive Health Services.	Zimbabwe + Mexico	Standard time per activity (incl. non-client time like recordkeeping, etc.) Indirect personnel cost (non-client time, e.g. time spent on recordkeepting etc.) allocated according to the volume of clients for each activity Standard time for each staff category per activity (in minutes) multiplied by total compensation package for each type of staff (dollars per minute)
34	Moreland S.	2000	How Much Will It Cost to Achieve Egypt's Population Goals?	Egypt	All costs of FP service providers and support agencies included
35	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	Personnel time requirements assessed through observation, allocated basedon proportion of woerkload (visits or pateint days)
36	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	The staff time required per visit for different methods is presented, but the way this was determined is not discussed. It is therefore impossible to determine whether visit costs include only time spent with clients, or if they also include non-client contact time.
37	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Isalmic Republic of Iran	Iran (Islamic Republic of)	Time spent per visit assessed through interviews.Salaries pro-rated amon activities according to time-allocation data.
38	Nortman D	1989	A cost-benefit analysis of the Mexican Social Security Administration's family planning program	Mexico	Included, unclear how non-client contact time was handled
39	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	Unclear whether staff salaries or paid n a per procedure basis.Staff costs based on estimates of amount of time spent on pre-/postop and in surgery. Unclear how down-time is dealt with.
40	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public Financial Cost	Kazakhstan	Total time allocated for one CYP: 45 min for pills, 30 min for condoms and 1 hour for IUD and injectables x multiplied by salary of ObGyn or midwife. Annual salary divided by number of working weeks and hours. Asumption of no downtime and staff working 8 hours a day.
41	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	
42	Routh S, Thwin AA, Barb N, Begum A.	2004	Cost efficiency in MCHFP Service Delivery in Bangladesh	Bangladesh	Staff time obtained through direct observations through time motion study - basis for allocation of common costs Also analysis of time spent on indirect service activities (recordkeeping, travel for home visits, preparatory activities, attending training etc.) and unoccupied time (resting, eating, waiting for clients)
43	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	Staff salaries plus holiday, vacation, sick pay x % time allocation based on time sheets filled out by employees
44	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	
45	Tangcharoensathien V, Suthivisessak P et al.	1990	Intrauterine contraceptive devices: comparing health centre and district hospital	Thailand	Labor cost (total salary costs divided by 5 and 10, respectively (FP services offered 2 days/2 afternoons per week) and then multiplied by % of IUD as % of total FP methods)

	Author	Year	Title	Country	Service Provider/Labor Cost
			costs in Thailand.		
46	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya	
47	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	CBD: Instructors' (=distributors') wages and benefits, travel and per diem expenses CSM: Fixed cost paid to wholesellers seling contraceptives to pharmacies
48	Vernon R, Rocuts K and Medina JE.	1987	The Provision of Natural Family Planning Services at Public Health Centers in Colombia.	Colombia	Only cost of time spent on these methods included
49	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	Assessment of time spent with client per method and type of visit (initial, follow-up, removal) through provider interview and observation. Total annual salaries+benefits divided by total minutes spent on client contact to obtain cost per minute of client contact (i.e. adjustment of cost per minute for downtime and time not spent on client contact)
50	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	Assessment of time spent with client per method and type of visit (initial, follow-up, removal) through provider interview and observation. Total annual salaries+benefits divided by total minutes spent on client contact to obtain cost per minute of client contact (i.e. adjustment of cost per minute for downtime and time not spent on client contact)
51	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	Assessment of time spent with client per method and type of visit (initial, follow-up, removal) through provider interview and observation. Total annual salaries+benefits divided by total minutes spent on client contact to obtain cost per minute of client contact (i.e. adjustment of cost per minute for downtime and time not spent on client contact)
52	Weissman E (4)	2009	The Cost of Family Planning in Kenya	Kenya	Assessment of time spent with client per method and type of visit (initial, follow-up, removal) through provider interview and observation. Total annual salaries+benefits divided by total minutes spent on client contact to obtain cost per minute of client contact (i.e. adjustment of cost per minute for downtime and time not spent on client contact)

Table 4: Overhead Costs

	Author	Year	Title	Country	Overhead Cost
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	Assumed to be 20% on top of direct costs.
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	Operating expenses, utilities, supplies, administrative expenses
4	Boateng J. et al.	2006	Costs of Reproductive Health Services Provided by Four CHAG Hospitals	Ghana	1. Clinical support labor - total salaries+benefits/annual number of clients 2. Administrative/support staff - total salaries+benefits/total number of visits + Office supplies, clinic rent, electricity, water, insurance and building security Divided by the total number of patient care units to obtain the cost per client visit
5	Bratt JH, Suazo M and Santos H.	1993	Costs of Family Planning Services Delivered Through ASHONPLAFA Programs: Final Report.	Honduras	Clinic support staff salaries included in the category "Joint Cost" Also included: Costs of buildings and land, utilities, maintenance, housekeeping and security Allocation to client visits based on average duration of client contact.
6	Çakir HV, Fabrikant SJ & Kircalioglu FN.	1996	Comparative Costs of Family Planning Services and Hospital-based Maternity Care in Turkey.	Turkey	Occupancy costs (electricity, water, heating, rent/depreciation and maintenance) and other indirect costs of clinic operation Allocated proportionally to the annual number of acceptors
7	Castillo S, Mazariegos C, Barrios CL et al.	1998	Cost Analysis of Reproductive Health Services Provided by the Ministry of Health, Guatemala. Final Technical Report.	Guatemala	Salaries and benefits of administrative personnel x % of total time medical providers spent in direct client contact (70%) divided by number of visits Allocation to client visits based on average duration of client contact. Facility costs: Maintenance and fuel expenses
8	Castro R. and Nelson AG.	1985	Estudio de Costos Quirugicos. Bogota: Association for Voluntary Surgical Contraception.	Colombia	Admin. Salaries + Operating equipment, clothes, washing and sterilization costs, water, electricity, transport, cafeteria, trashcollection
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	Programme managers, supervisors, and support staff Fuel, maintenance and public transportation Utilities Allocation to CBD program determined through interviews with knowledgeable staff.
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	12 months of salary + benefits for driver, animatrice Fuel, vehicle repair and maintenance, Not included operating costs of facilities
11	Doucoure A, Tandia D, Sangare M, Katz K.	1995	Programmatic Evaluation of Norplant Introduction in Mali.	Mali	
12	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bangladesh.	Bangladesh	Administrative overhead
13	Foreit KG	2002	Broadening Commercial Sector Participation in Reproductive Health. The Role of the Public Sector Prices on Markets for Oral Contraceptives. Technical Paper Series No. 3	Bangladesh	

	Author	Year	Title	Country	Overhead Cost
14	Foreit KG, Foreit JR, Lagos G & Guzman A.	1993	Effectiveness and cost-effectiveness of post-partum IUD insertion in Lima, Peru.	Peru	Facility maintenance
15	Gray RH et al.	1993	Evaluation of natural family planning programmes in Liberia and Zambia.	Liberia	No detail given, but included
16	Hubacher D, Cardenas C, Hernandez D, Cortes M., Janowitz B.	1999	The Costs and Benefits of IUD Follow-Up Visits In the Mexican Social Security Institute	Mexico	Not included
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Support staff: Sum of monthly cost allocated among facility's health care providers, giving each an equal share. That cost is then assigned to FP visits according to length of each type of visit. Management costs excluded.
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	Admin personnel costs allocated across programs based on no. of employees in each program. Other admin expenditures (Maintenance, travel, rent) distributed proportionally to the size of each program's budget
19	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding Services - Zimbabwe	Zimbabwe	Excluded
20	Janowitz B, Chege J, Thompson A, Rutenberg N & Homan R.	2000	Community-Based Distribution in Tanzania: Costs and Impacts of Alternative Strategies To Improve Worker Performance.	Tanzania	Payment to supervisors divided by number of agents, then visits per agent
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	Supervisors
22	Janowitz B, Jamil K, Chowdhury J, Rahman B and Hubacher D.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program.	Bangladesh	
23	Janowitz B, Jamil K, Chowdhury J, Rahman B, and Holtman M.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program.	Bangladesh	
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Not included
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	CBD - Salaries, benefits of director and supervisors Transportation cost of supervisors CSM - salaries and benefits of managementy
26	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	Payments to supervisors
27	Jha P, Bangoura O, Ranson K.	1998	The cost-effectiveness of forty health interventions in Guinea.	Guinea	
28	Kimunya, A.	1996	Cost Effectiveness Analysis of FPPS Clinics.	Kenya	
29	Leoprapai, Boonlert, Chalongphop Susangkran, et al.	1991	Cost of Public Family Planning Services and Scope of Private Sector Provisions.	Thailand	Included.
30	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Personnel: Supervisory and support personnel time Other: Supplies, building maintenance Both costs allocated to different interventions according to % of total service time spent on each type of service by the service provider

	Author	Year	Title	Country	Overhead Cost
31	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	Salaries and benefits of all provincial level staff divided by number of visits/CYP Transportation costs - bicycles for CBD and motorcycles and mileage allowance for supervisors - annualized cosst
32	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	Salaries of voluntary surgical contraception program administrators shadow-priced if paid out of non-donor funds Some facility overhead costs included,various allocation assumptions
33	Mitchell MD, Littlefield J & Gutter S.	1999	Costing of Reproductive Health Services.	Zimbabwe + Mexico	Indirect cost allocated according to methodology developed by MEXFAM: Higher % of costs allocated to services that require more support, i.e. surgical procedures bear higher % than routine FP or RH visit.
34	Moreland S.	2000	How Much Will It Cost to Achieve Egypt's Population Goals?	Egypt	All costs of FP service providers and support agencies included
35	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	Utilities, maintenance and repairs allocated based on proportion of space devoted to services
36	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	
37	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Isalmic Republic of Iran	Iran (Islamic Republic of)	Admin and supervisor staff at district level allocated acorss programmes in proportion to labor costs Electricity, water, heating , cleaning allocated based on portion of space used by FP services.
38	Nortman D	1989	A cost-benefit analysis of the Mexican Social Security Administration's family planning program	Mexico	Included, unclear how allocated to FP
39	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	Annual cost of admiinstrative and support staff divided by number of procedures to produce per procedure "indirect costs" No facility overhead.
40	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public Financial Cost	Kazakhstan	Utility and overhead costs (no specific on what overhead closts included) Utilities - cost divided by number of outpatient consultations
41	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	Allocated to services based on relative effort devoted to each of them
42	Routh S, Thwin AA, Barb N, Begum A.	2004	Cost efficiency in MCHFP Service Delivery in Bangladesh	Bangladesh	Rent, utilities, maintenance and repair Allocated based on client contact time of providers Non-medical supplies - Cleaning supplies, office stationary, bandages
43	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	Office rent, telephone, fax, water, sewage, printing, etc. allocated proportional to salary costs
44	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	Direct labor cost (salaries)
45	Tangcharoensathien V, Suthivisessak P et al.	1990	Intrauterine contraceptive devices: comparing health centre and district hospital costs in Thailand.	Thailand	
46	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya	
47	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	
48	Vernon R, Rocuts K and Medina JE.	1987	The Provision of Natural Family Planning Services at Public Health Centers in Colombia.	Colombia	Exluded since common to all methods
49	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	Not included
50	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	Not included

	Author	Year	Title	Country	Overhead Cost
51	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	Not included
52	Weissman E (4)	2009	The Cost of Family Planning in Kenya	Kenya	Not included

Table 5: Capital Costs

	Author	Year	Title	Country	Capital Costs
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	Equipment and furniture - useful life assumed to be 10 years, 10% opportunity cost. Cost of clinic space calculated using imputed rent plus estimate of annual maintenance.
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	Relevant depreciation expsnes of buildings and equipment included when possible
4	Boateng J. et al.	2006	Costs of Reproductive Health Services Provided by Four CHAG Hospitals	Ghana	Equipment and furniture Current price, useful life of 30 years, 15% discount, annualized and divided by number of visits
5	Bratt JH, Suazo M and Santos H.	1993	Costs of Family Planning Services Delivered Through ASHONPLAFA Programs: Final Report.	Honduras	Annualized equipment and/or furniture of clinic + opportunity cost of capital (assumed to be 5%) Included in the category "Joint Cost" Allocation to client visits based on average duration of client contact.
6	Çakir HV, Fabrikant SJ & Kircalioglu FN.	1996	Comparative Costs of Family Planning Services and Hospital-based Maternity Care in Turkey.	Turkey	Allocation to client visits based on average duration of client contact.
7	Castillo S, Mazariegos C, Barrios CL et al.	1998	Cost Analysis of Reproductive Health Services Provided by the Ministry of Health, Guatemala. Final Technical Report.	Guatemala	
8	Castro R. and Nelson AG.	1985	Estudio de Costos Quirugicos. Bogota: Association for Voluntary Surgical Contraception.	Colombia	Depreciation (not specified for what)
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	Annualized cost of furniture (10 years), equipment (3 years), vehicles (7 years) and buildings (not specified) this proportion was calculated Allocation to CBD program determined through interviews with knowledgeable staff.
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	Not included: depreciation of vehicles, buidings used.
11	Doucoure A, Tandia D, Sangare M, Katz K.	1995	Programmatic Evaluation of Norplant Introduction in Mali.	Mali	
12	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bangladesh.	Bangladesh	
13	Foreit KG	2002	Broadening Commercial Sector Participation in Reproductive Health. The Role of the Public Sector Prices on Markets for Oral Contraceptives. Technical Paper Series No. 3	Bangladesh	
14	Foreit KG, Foreit JR, Lagos G & Guzman A.	1993	Effectiveness and cost-effectiveness of post-partum IUD insertion in Lima, Peru.	Peru	
15	Gray RH et al.	1993	Evaluation of natural family planning programmes in Liberia and Zambia.	Liberia	No detail given, unclear whether included
16	Hubacher D, Cardenas C, Hernandez D, Cortes M., Janowitz B.	1999	The Costs and Benefits of IUD Follow-Up Visits In the Mexican Social Security Institute	Mexico	No
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Annualized (facility, land - 30 years, furniture and equipment - 10 years) value divided by number of visits a year.

	Author	Year	Title	Country	Capital Costs
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	
19	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding Services - Zimbabwe	Zimbabwe	Excluded.
20	Janowitz B, Chege J, Thompson A, Rutenberg N & Homan R.	2000	Community-Based Distribution in Tanzania: Costs and Impacts of Alternative Strategies To Improve Worker Performance.	Tanzania	Excluded.
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	Capital cost from governemnt purchase orders, not specified what capital costs were included
22	Janowitz B, Jamil K, Chowdhury J, Rahman B and Hubacher D.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program.	Bangladesh	
23	Janowitz B, Jamil K, Chowdhury J, Rahman B, and Holtman M.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program.	Bangladesh	Furniture & Instruments annualized over 10 years at 5% discount, building over 30 years at 5% discount Estimates also provided without capital component
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Not included
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	No
26	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	
27	Jha P, Bangoura O, Ranson K.	1998	The cost-effectiveness of forty health interventions in Guinea.	Guinea	Equipment - replacemnt cost divided by number of uses over lifetime and number of uses
28	Kimunya, A.	1996	Cost Effectiveness Analysis of FPPS Clinics.	Kenya	
29	Leoprapai, Boonlert, Chalongphop Susangkran, et al.	1991	Cost of Public Family Planning Services and Scope of Private Sector Provisions.	Thailand	Included.
30	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Not included, assumed to be the same for the different facilities
31	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	
32	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	Lease payments (assumed opportunity cost of vehicles), annual cost of equipment includes depreciation component, but not opportunity cost of capital. Donated building space shadow-priced.
33	Mitchell MD, Littlefield J & Gutter S.	1999	Costing of Reproductive Health Services.	Zimbabwe + Mexico	Not included
34	Moreland S.	2000	How Much Will It Cost to Achieve Egypt's Population Goals?	Egypt	All costs of FP service providers and support agencies included
35	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	Buildings
36	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	
37	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Isalmic Republic of Iran	Iran (Islamic Republic of)	No.

	Author	Year	Title	Country	Capital Costs
38	Nortman D	1989	A cost-benefit analysis of the Mexican Social Security Administration's family planning program	Mexico	Seems included, no detail on methodology
39	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	Useful life 10 years for steel equipment, 5 year for plastic, wood and electrical appliances. Buildings over 10-50 years. Allocated to sterilizations based on proportion of operating room time.
40	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public Financial Cost	Kazakhstan	No.
41	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	
42	Routh S, Thwin AA, Barb N, Begum A.	2004	Cost efficiency in MCHFP Service Delivery in Bangladesh	Bangladesh	
43	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	Office equipment and furniture proportional to salary costs
44	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	
45	Tangcharoensathien V, Suthivisessak P et al.	1990	Intrauterine contraceptive devices: comparing health centre and district hospital costs in Thailand.	Thailand	Buildings and fixed assets depreciated over 20 and 5 years, respectively
46	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya	
47	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	CBD: Depreciation of jeep, film projector and generator
48	Vernon R, Rocuts K and Medina JE.	1987	The Provision of Natural Family Planning Services at Public Health Centers in Colombia.	Colombia	Exluded since common to all methods
49	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	Not included
50	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	Not included
51	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	Not included
52	Weissman E (4)	2009	The Cost of Family Planning in Kenya	Kenya	Not included

Table 6: Training, IEC and Other Cost

	Author	Year	Title	Country	Service Provider/Labor Cost
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	
4	Boateng J. et al.	2006	Costs of Reproductive Health Services Provided by Four CHAG Hospitals	Ghana	
5	Bratt JH, Suazo M and Santos H.	1993	Costs of Family Planning Services Delivered Through ASHONPLAFA Programs: Final Report.	Honduras	CBD education activities and promotion costs included in category "Joint Costs" Allocation to client visits based on average duration of client contact.
6	Çakir HV, Fabrikant SJ & Kircalioglu FN.	1996	Comparative Costs of Family Planning Services and Hospital-based Maternity Care in Turkey.	Turkey	
7	Castillo S, Mazariegos C, Barrios CL et al.	1998	Cost Analysis of Reproductive Health Services Provided by the Ministry of Health, Guatemala. Final Technical Report.	Guatemala	Patient Costs (transportation and wait time at minimum wage) Shown separately
8	Castro R. and Nelson AG.	1985	Estudio de Costos Quirugicos. Bogota: Association for Voluntary Surgical Contraception.	Colombia	Educationsl materials, taxes, legal expenses
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	CBD Training, annualized over 15 years
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	Educational outreach expense
11	Doucoure A, Tandia D, Sangare M, Katz K.	1995	Programmatic Evaluation of Norplant Introduction in Mali.	Mali	
12	Fiedler J, Day L.	1997	A Cost Analysis of Family Planning in Bangladesh.	Bangladesh	
13	Foreit KG	2002	Broadening Commercial Sector Participation in Reproductive Health. The Role of the Public Sector Prices on Markets for Oral Contraceptives. Technical Paper Series No. 3	Bangladesh	
14	Foreit KG, Foreit JR, Lagos G & Guzman A.	1993	Effectiveness and cost-effectiveness of post-partum IUD insertion in Lima, Peru.	Peru	Cost of training and educator salaries amortized over 5 years and then divided by 6,000 which was assumed to be the number of IUDs that could be inserted annually post-training.
15	Gray RH et al.	1993	Evaluation of natural family planning programmes in Liberia and Zambia.	Liberia	No detail given, but included
16	Hubacher D, Cardenas C, Hernandez D, Cortes M., Janowitz B.	1999	The Costs and Benefits of IUD Follow-Up Visits In the Mexican Social Security Institute	Mexico	
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Excluded
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	Evaluation costs

	Author	Year	Title	Country	Service Provider/Labor Cost
19	Janowitz B et al.	2002	Excess Capacity and the Cost of Adding Services - Zimbabwe	Zimbabwe	Excluded
20	Janowitz B, Chege J, Thompson A, Rutenberg N & Homan R.	2000	Community-Based Distribution in Tanzania: Costs and Impacts of Alternative Strategies To Improve Worker Performance.	Tanzania	Training costs annualized over 10 years, divided by number of agents, then visits per agent
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	
22	Janowitz B, Jamil K, Chowdhury J, Rahman B and Hubacher D.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program.	Bangladesh	
23	Janowitz B, Jamil K, Chowdhury J, Rahman B, and Holtman M.	1996	Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program.	Bangladesh	
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Not included
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	CBD - promotional materials CSM Scost of subcontracts for promotion and publicity
26	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	Training costs
27	Jha P, Bangoura O, Ranson K.	1998	The cost-effectiveness of forty health interventions in Guinea.	Guinea	
28	Kimunya, A.	1996	Cost Effectiveness Analysis of FPPS Clinics.	Kenya	
29	Leoprapai, Boonlert, Chalongphop Susangkran, et al.	1991	Cost of Public Family Planning Services and Scope of Private Sector Provisions.	Thailand	
30	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Patient costs (travel and wait time)
31	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	Annualized training costs
32	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	
33	Mitchell MD, Littlefield J & Gutter S.	1999	Costing of Reproductive Health Services.	Zimbabwe + Mexico	
34	Moreland S.	2000	How Much Will It Cost to Achieve Egypt's Population Goals?	Egypt	All costs of FP service providers and support agencies included
35	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	Transport
36	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	
37	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Isalmic Republic of Iran	Iran (Islamic Republic of)	
38	Nortman D	1989	A cost-benefit analysis of the Mexican Social Security Administration's family planning program	Mexico	Seems included as study allocated entire budget of agency

	Author	Year	Title	Country	Service Provider/Labor Cost
39	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	Cost of training depreciated over 5 years
40	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public Financial Cost	Kazakhstan	
41	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	
42	Routh S, Thwin AA, Barb N, Begum A.	2004	Cost efficiency in MCHFP Service Delivery in Bangladesh	Bangladesh	
43	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	Training workshops
44	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	All expenditures made in project country - SOMARC advertising, market research, packaging and distribution etc.
45	Tangcharoensathien V, Suthivisessak P et al.	1990	Intrauterine contraceptive devices: comparing health centre and district hospital costs in Thailand.	Thailand	Cost of health promotion sections of the hospitals and health centers allocated to FP based on number of days spent per week on FP (1/5 and 1/10, respectively). Then allocated to IUD based on % of time spent on IUD compared to all FP methods provided. Also included: optional user charges (hospitals only)
46	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya	
47	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	CBD: Brochures and manuals for the distributors CSM: Training of pharamcists not included because not part of regular program, cost of pamphlets included.
48	Vernon R, Rocuts K and Medina JE.	1987	The Provision of Natural Family Planning Services at Public Health Centers in Colombia.	Colombia	
49	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	Not included
50	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	Not included
51	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	Not included
52	Weissman E (4)	2009	The Cost of Family Planning in Kenya	Kenya	Not included

Table 7: Units of Contraceptives and Visits Required per CYP

	Author	Year	Title	Country	Unit and Visit Assumptions
1	Abel, Edward.	1995	Kenya Family Planning Financial Resource Requirements (1993-2010).	Kenya	
2	Balk et al.	1988	Analysis of Cost-Effectiveness of the Family Planning Health Services Project in Matlab, Bangladesh	Bangladesh	
3	Barberis M, Harvey PD.	1997	Costs of Family Planning Programmes in Fourteen Developing Countries by Methods of Service Delivery.	Colombia +	To make studies compatible, use of standard assumptions across examined programs: Sterilization 12.5 CYP, pills 13 cycles, condoms 150 if free, 100 if purchased, 12 injections, implant and IUD 3.5 years
9	Chege JN, Askew I	1997	An Assessment of CBD FP Programmes in Kenya	Kenya	
10	Coeytaux F, Donaldson D, Aloui T, Kilani T, Fourati H.	1989	An Evaluation of the Cost-Effectiveness of Mobile Family Planning Services in Tunisia.	Tunisia	13 pill cycles, 100 condoms, 4 tubes of foaming tablets, 2.5 years for IUD
17	Hubacher D, Holtman M, Fuentes M, Perez-Palacios G and Janowitz B.	1999	Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health	Mexico	Number of follow-up visits for typical use - pill 6.5, condoms 12.2, injectable 10.5, IUDs 3.6, sterilization 1 with varying length of use for the different methods (pill 13 months, 1-month injectable 12 months, condoms 1.5 years, IUD 25 months, sterilization about 11 years Pills per CYp 14 cycles, 12.6 injections, 105 condoms
18	International Planned Parenthood Federation. Western Hemisphere Region.	1983	Cost per Couple-Year of Protection. The Case of Profamila 1977-1980.	Colombia	First visit IUD - 30 month of protection, first visit pill 13 months, other method 6 months, FS 12.5 years
21	Janowitz B, Holtman M, Hubacher D, Jamil K.	1997	Can the Bangladeshi Family Planning Program Meet Rising Needs Without Raising Costs?	Bangladesh	Average number of follow-up visits 3.6, ranging between less than 2 for sterilization acceptors and 7 for pill users. Cyp per method - Steriziliation - difference between age at acceptance and 45,
24	Janowitz B, Kanchanisinith K, Aumkul N et al.	1994	Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs.	Thailand	Number of average visits based on hospital record sampling (1 for IUD, not given for implant, 4 annual visits for injectable). Estimates given for different lengths of use/CYPs (1, 2, 3, 3.5 and 5 years)
25	Janowitz B, Margarita Suazo, Daniel B. Fried, John H. Bratt, Patricia E. Bailey.	1992	Impact of SM on Contraceptive Prevalence and Cost in Honduras	Honduras	
26	Janowitz B, Measham D & West C.	1999	Issues in the financing of family planning services in sub-Saharan Africa. Chapter 5 in: Financing of Family Planning Services.	Kenya +	
27	Janowitz B, Thompson,A.	1998	The Cost of Reproductive Health Services at the Facility Level. Technical Assistance to the Africa OR/TA Project II in Costing Analysis.	Tanzania	
31	Levin A, Amin A, Saifi R, Rahman A, Barkat-e-Khuda and Mozumder K.	1999	Cost-effectiveness of family planning and maternal health service delivery strategies in rural Bangladesh.	Bangladesh	Standard conversion rates for CYP in Bangladesh were used - 13 pill cycles, 120 condoms, 4 injectables, IUD 2.5 years
32	Maggwa, B.N., Askew, I., et al.	2001	An Assessment of the Zimbabwe National Family Planning Council's Community-Based Distribution Council.	Zimbabwe	13 pill cycles, 100 condoms
33	McBride ME, Bertrand JT, Fernandez RS	1987	Cost Effectiveness of the APROFAM Program for Voluntary Surgical Contraception in Guatemala.	Guatemala	
36	Munguti N, Mokua M et al.	2006	Cost Analysis of ReproductiveHealth Services in PCEA Chogoria Hospital, Kenya	Kenya	

	Author	Year	Title	Country	Unit and Visit Assumptions
37	Musau S.	1996	Mkomani Clinic Society: Cost Analysis.	Kenya	
38	Nakhaee N et al.	2002	Assessing the Cost-effectiveness of contraceptive methods in Shiraz, Islamic Republic of Iran	Iran (Islamic Republic of)	Based on the duration of protection of each unit of various contraceptive methods, conversion factors were calculated [7]: to determine the inevitable wastage that occurs with pills and condom, and also to estimate average coital frequency of con-dom users, structured interviews with randomly selected samples of users were administered; to calculate the average duration of use of implants (Norplant) and IUDs (Copper-T 380A), the life-table method [8] was used; for sterilization, the average age of the wives of the sterilized couples was computed Pills 15 cycles, 80 condoms, 4 injectables, 1 implant 4.3 CYPs, IUD 6 CYPs, tubal ligation 11 and vasectomy 12 CYP
40	PKMI.	1988	Assessment of Reimbursement Mechanism and Cost Analysis of Voluntary Surgical Contraception.	Indonesia	
41	Rani M, Chao s et al.	2006	Fertility Regulation in Kazakhstan: The Role of Providers and the Public Financial Cost	Kazakhstan	For oral contraceptives, one couple-year of protection equaled the cost of 12 cycles; for condoms, the cost of 100 condoms; for Depo-provera, the cost of four injections; and for an IUD, it was assumed that on average, a woman will use one IUD for two years.
42	Roper L.	1987	The management of family planning programs: PROFAMILIA's experience. Studies in Family Planning 18:338-351.	Colombia	
44	Stover C, Ahmed KU et al.	1997	Cost Study. Local Initiatives Program (LIP) Family Planning Management Development Bangladesh.	Bangladesh	15 cycles. 150 condoms, 5 injectables, IUD 2 years
45	Stover, John and Wagman, Anne E.	1991	The Costs per Couple-Year of Protection for SOMARC Social Marketing Programs	Ecuador +	
47	Twahir et al.	1996	Integration of MCH/FP with STD/HIV services at Mkomani Clinic Society clinics, Mombasa, Kenya.	Kenya	
48	Vernon R, Ojeda G and Townsend MC.	1988	Contraceptive Social Marketing and Community-Based Distribution Systems in Colombia.	Colombia	
50	Weissman E (1)	2009	The Cost of Family Planning in Jordan	Jordan	13 pill cycles, 100 condoms, 4 injectables, IUD and implant 3 CYPs 3 annual visits for pills and condoms, 4 for injectable, 3 follow-ups for IUD
51	Weissman E (2)	2009	The Cost of Family Planning in Mali	Mali	13 pill cycles, 100 condoms, 4 injectables, IUD and implant 3 CYPs 12 annual visits for pills and condoms, 4 for injectable, 2 follow-up visits for IUD, one for implant
52	Weissman E (3)	2009	The Cost of Family Planning in Ethiopia	Ethiopia	13 pill cycles, 100 condoms, 4 injectables, IUD and implant 3 CYPs 12 annual visits for pills and condoms, 4 for injectable, 2 follow-up visits for IUD, one for implant

APPENDIX C: PROJECTING THE COSTS OF FAMILY PLANNING PROGRAMS: METHODOLOGY REVIEW

Background Paper Prepared for the

Expert Group Meeting on Family Planning Costing

Sept 1, 2011

Brian Briscombe
Futures Group

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Introduction

The current interest in revitalizing family planning (FP) programs puts increased attention on the estimation of resource needs, especially those that are financial. This paper will address issues related to methods of estimating family planning program costs. Such estimates have been used by government officials to plan national and sub-national budgets, by NGOs and donors to determine levels of donor support at all levels, and used for advocacy purposes at all levels to highlight shortfalls in funding or to put FP costs into perspective for various audiences. This paper will examine a variety of models and studies that represent this range of audiences and purposes.

The models and studies mentioned in this report include:

Table 1: All Models and Studies Examined for this Background Paper

Tool or Report Name	**Year(s) Covered**	**Organization(s)**	**Methodology or Other Related Publication(s)**
FAMPLAN	Flexible	USAID|Health Policy Initiative (HPI)	User Manual[16]
The FP Gap Tool	Flexible	USAID|HPI & USAID|Health Policy Project (HPP)	• *Adding it Up* • Email explanations from John Stover
CastCost	Flexible	Centers for Disease Control and Prevention (CDC) & USAID|MEASURE Project	User Manual[17]
Reality Check	Flexible	USAID|RESPOND Project	User's Guide[18]
Reproductive Health Costing Tool (RHCT)	Flexible	UNFPA	As used by AIU
Adding it Up[19] (*AIU)*	2008	Guttmacher Institute & UNFPA	• *Assessing Costs and Benefits Of Sexual and*

[16] Stover, John et al, *FamPlan Version 4, A Computer Program for Projecting Family Planning Requirements*, The Policy Project, USAID, Feb 2006.
[17] Binzen, Susanna et al. December 2010. Estimating Future Contraceptive Requirements Using the CASTCOST CONTRACEPTIVE FORECAST AND COST ESTIMATE SPREADSHEET.
[18] *Reality Check, A Planning and Advocacy Tool for Strengthening Family Planning Programs, User's Guide, Version 2*, USAID|Respond Project, 2010.
[19] Singh, S, J E Darroch, L Ashford and M Vlassoff. 2009. *Adding it Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health*. New York: The Alan Guttmacher Institute and UNFPA. http://www.guttmacher.org/pubs/AddingItUp2009.pdf.

			Reproductive Health Interventions[20] • *RHCT* • *AIU Methodology (Draft)*[21]
Programme of Action of the International Conference on Population and Development (ICPD)[22] (aka "ICPD update")	2009-2015	UNFPA	• Methodological Report[23] • As reviewed by *Funding Common Ground*
Contraceptive Projections and the Donor Gap[24]	2008-2020	Reproductive Health Supplies Coalition (RHSC) & Futures Institute	
World Population Prospects and Unmet Need for Family Planning	2005-2050	Hewlett Foundation & Futures Group	• Excel workbooks used to calculate projections • Authors' debrief
Funding Common Ground[25]	(Covers studies not years)	Population Action International (PAI)	• Adding It Up • ICPD Update • Taskforce WHO Normative Approach
Tanzania's National Family Planning Costed Implementation Plan[26]	2010-2015	Tanzania's Ministry of Health and Social Welfare (MoHSW) & partners	

[20] Vlassoff, M, S Singh, J E Darroch, E Carbone and S Bernstein. 2004. *Assessing Costs and Benefits of Sexual and Reproductive Health Interventions: Occasional Report.* No. 11. New York: The Alan Guttmacher Institute. http://www.guttmacher.org/pubs/or11.pdf.

[21] Adding It Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health Estimation Methodology, Draft report received via email from Dr. Jacqui Darroch on 23 May, 2011.

[22] UN Economic and Social Council, *Flow of Financial Resources for Assisting in the Implementation of the Programme of Action of the International Conference on Population and Development*, New York: UN, 2009.

[23] UNFPA Technical Division, *Revised Cost Estimates for the Implementation of the Programme of Action for the International Conference on Population and Development: A Methodological Report*, New York: UNFPA, 2009.

[24] Ross, John and Weissman, Eva and Stover, John. Reproductive Health Supplies Coalition (RHSC), *Contraceptive Projections and the Donor Gap*, Meeting the Challenge, February 2009.

[25] Dennis, Suzanna and Mutunga, Clive, Funding Common Ground: Cost Estimates for International Reproductive Health, Population Action International, April 2010.

[26] The United Republic of Tanzania Ministry of Health and Social Welfare, *The National Family Planning Costed Implementation Plan 2010-2015.*

This background paper will discuss the main methodological issues facing analysts in computing program, national and international estimates of family planning and lay out the main issues. It will also compare and analyze different approaches and models and discuss each approach's underlying assumptions, inputs and data requirements.

Section One: Discussion of differences in studies that are appropriate and intentional

- Issue #1: FP program scope/breadth

Studies' inclusion or exclusion of FP program elements often varies for legitimate reasons in accordance with the needs and interests of the intended audience. Program elements (aka "components" or "sub-components") refer to the categories and sub-categories of expenses that one could include when calculating the overall costs of FP. For example, two studies may focus on the direct costs of FP, yet one study may exclude labor and overhead costs because the study's target audience is only interested in the costs of FP commodities and supplies. One global study may include FP program support costs such as FP education, logistics system strengthening, advocacy, etc. while another global study may make no effort to include such categories of expenses.

Such discrepancies in study breadth or scope sometimes arise intentionally because, for example, some cost studies are run to help donors or NGOs to determine their budgets, while other studies are run to influence policy makers. These different audiences are asking different questions and therefore a study may focus on its target audience's particular interests. If a donor intends to fund only public sector FP commodities, the costing study might only require information on commodity costs for the public sector. The FamPlan or CastCost models, among others, are designed for such an audience. These models calculate only the cost of FP commodities (although FamPlan offers one additional costing option; the ability to subtract user fees collected from FP clients to produce a total net cost of commodities from the provider's perspective[27]). Service provider budgeting often requires information on a broader range of costs, including commodities, personnel, facilities, and overhead costs. Service providers and their funders usually need to know their full costs and costs are allocated across various activities. In this case the study audience would not need to know anything about public sector slack time or other such costs.

Policy analysts (including policy advocates), however, may be interested in just such costs if they take a health system approach or attempt to estimate the costs and benefits of FP versus other public interventions. Policy analysts might also need to impute costs for volunteers or donated items when trying to measure the economic or social costs and benefits. National policymakers may be interested in such arguments in order to determine which policies to support or prioritize. Government officials or international donors responsible for funding

[27] P. 110 FamPlan manual

various elements of FP provision will be more interested in estimates of actual costs for the programs they intend to fund.

- Issue #2: Geographic scope

It is also common for costing studies also vary in geographic scope depending on the needs of the intended audience. The Guttmacher Institute's *Adding It Up* (AIU) report advocates for increased investments in FP services and other health interventions and is aimed at global donors, and therefore it naturally includes all current FP aid recipient countries. Transition countries in Europe are included in the UNFPA's revised ICPD estimates, but not in *AIU*[28]*.* Similarly Futures Group's *World Population Prospects and Unmet Need for Family Planning,* commissioned by the Hewlett Foundation*,* estimated FP costs for regions of the world that corresponded with the same regions in a parallel Hewlett-funded study on population growth and climate change. The recent RHSC study focusing on total global demand for contraceptives includes additional countries and additional contraceptive users (such as those using condoms to prevent HIV) because its intended audience and purpose are different. The Nigerian National Health Insurance Scheme (NHIS) is currently interested in the costs of providing FP to twelve target states while the Nigerian Federal Ministry of Health (FMOH) is primarily focused on projections of Nigeria's national FP commodity needs. We must distinguish these intentional, explicit, and appropriate differences in geographic breadth (and therefore methodology) from unintentional or unnecessary methodology differences among FP costing studies, which are the focus of Section Two of this paper.

- Issue #3: Time Frame

As indicated in the second column of Table #1 (above), the time periods covered by FP costing studies in this background review ranged from one year (Guttmacher), 20 years (RHSC's *Contraceptive Projections and the Donor Gap)* all the way to 45 years (Futures Group's *World Population Prospects and Unmet Need for Family Planning*). Although experts have legitimate reasons for choosing these timeframes, we now consider the challenges and consequences of these choices.

Studies with shorter time frames—especially single year studies—risk sacrificing realism for the benefit of simplicity. *Adding It Up* is the most obvious example of this dilemma; the advocacy value of its findings is high because its goal (to find the hypothetical cost of meeting all unmet need for FP) is clear and easy for its audience to grasp. Yet its authors know that this premise is theoretical—no country will satisfy all unmet need for FP so quickly.

On the other end of the spectrum, the authors of *World Population Prospects* chose a 45 year time frame in part because they wanted to use realistic assumptions regarding the speed of MCPR increases. Given that Africa's historical rate of FP uptake has been roughly half a percentage point per year (according to DHS data), it would take decades to meet all current unmet need in Africa, so the study uses decades. Yet by stretching the time frame to decades, the study must confront other problems such as the fact that unmet need is a moving target.

[28] AIU Draft Methodology paper, p. 8

The study acknowledges that demand for FP will most likely keep rising as MCPR increases, yet for the sake of simplicity and clarity calculates meeting current unmet need–not future unmet need—so that all unmet need can be satisfied by 2050.

An issue that is important to understand when considering dynamic and longer term studies is that the built-in demographic momentum of a country, especially one that has a high population growth rate, can have significant effects. Many cost studies present different scenarios, usually a high, sometimes a medium and a low growth scenario in terms of CPR growth. How fast that growth is and what trajectory it is assumed to take will have an impact on the estimated costs of each scenario and therefore the differences.

Given these challenges at both ends of the time duration spectrum, it may be inappropriate to conclude that one time frame is better than another. Authors will continue to choose time frames that suit the study's intended audience and here we can only discuss ways to minimize the problems arising at the middle and far ends of the time frame spectrum. While the short-end's shortcomings are clear—simple lack of realism—the challenges facing studies with longer time frames include:
--Whether and how to change method mix assumptions over time
--Whether to take into account the time value of money
--Whether to assume that the real cost of various elements will change over time
--How to model method uptake over time

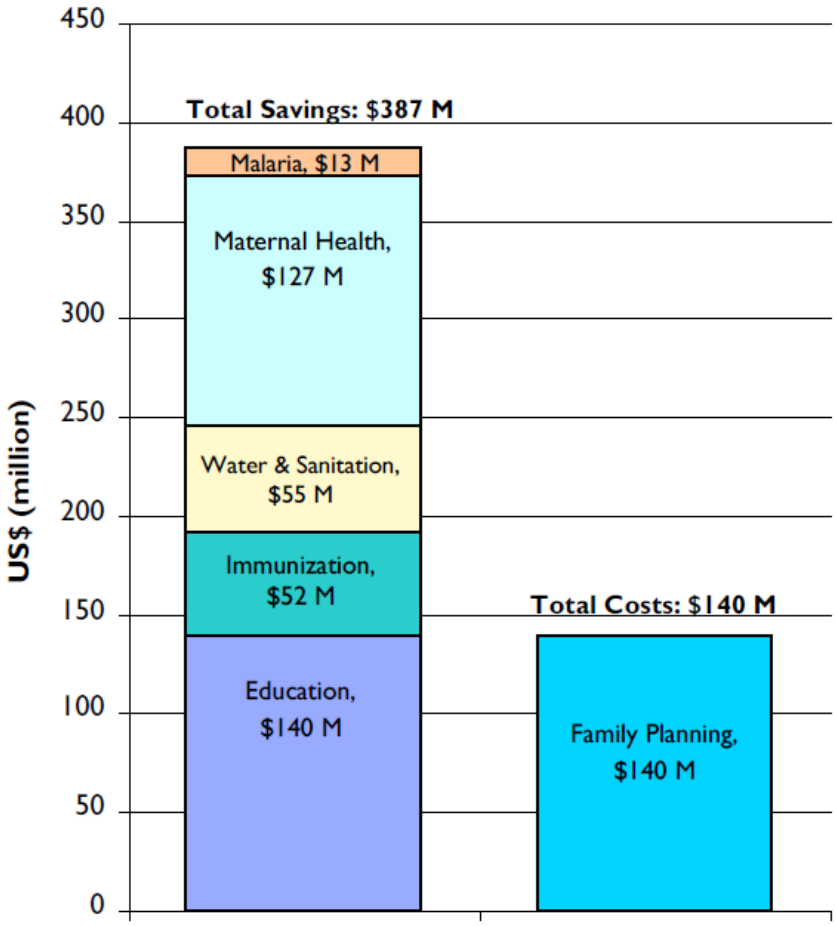
All of these issues are discussed below in Section Two of this paper.

- Issue #4: Level of precision

Differing audiences are not only interested in differing programmatic, geographic, and time duration study scopes, they also require differing levels of precision when presented with cost estimates. Although all studies generally strive to be as accurate as possible, some—particularly studies intended for advocacy—have the luxury of knowing that their estimates are not intended to be used to set precise funding targets. This fact makes it more palatable for most advocacy studies to calculate costs in ways that may sacrifice precision for convenience or presentational clarity, such as when a global study takes a global average cost per user rather than painstakingly calculating regional average costs per user. This paper's comments on Guttmacher's methodology (see below sections), for example, must be taken in this context given that Guttmacher's compressed timeline—its calculation of meeting all unmet need during a single year—was never intended to precisely estimate what the actual costs of meeting all current unmet need would be. Rather, Guttmacher created a theoretical advocacy tool that sacrifices some precision for the sake of simplicity and clarity… its rough monetary estimates drive home some persuasive advocacy arguments.

By contrast, Tanzania's National Family Planning Costed Implementation Plan, for example, attempts to achieve a greater level of cost precision since its intended audience may base actual budget decisions on its cost estimates. The Futures Group's MDG Brief analyses also exemplify the acceptable level of precision that might be expected in advocacy analyses (as opposed to analyses designed to inform budget decisions). In the below Nigerian analysis, cost estimates are rounded to the nearest million US dollars and the precise amounts are not as important as the general point that total social sector savings are more than twice the size of FP costs…

Chart 1: Social Sector Cost Savings and FP Costs to Meet Unmet Need in Nigeria, 2005-2015 (Cumulative)[29]



At this point in our review, it is relevant to note that Population Action International's (PAI's) *Funding Common Ground*[30] report—which like this paper attempts to compare and analyze

[29] Achieving the MDGs, The Contribution of Family Planning, Nigeria, USAID|Health Policy Initiative, July 2009 (based on 2003 Nigeria DHS data), p.2

several reports on reproductive health (RH) costs—does not generally distinguish between differences in study breadth that should be kept and those that should be eliminated. The PAI authors generally suggest that the costing community eliminate all differences in study breadth, as these recommendations excerpted from their report indicate:

- "…estimates should include a full package of family planning, reproductive health, and maternal health services. For flexibility and use with different audiences, sets of interventions should be presented separately. For example, it makes sense to calculate reproductive and maternal health together, so long as non-maternal reproductive interventions can be broken out for advocacy with target audiences."
- "…estimates should include the entire developing world, not a subset. Ideally a subset of countries could be pulled out as needed."

Presumably these recommendations apply only to studies that cover many nations across multiple regions.

It would be useful for the FP costing community to first reach consensus in principal on whether it is realistic to expect authors with a range of intended audiences to commit to this level of uniformity in study breadth, or whether discussion on standardizing study breadth should be confined to the more narrow range of categories which follow.

Section Two: Avoidable or Problematic Differences in Study Methodologies:

- Issue #1: Variations in FP program components definitions and terminology

Although we have seen in Section One of this paper that some differences in study breadth are natural and intentional, other differences are sometimes unintentional or should be avoided whenever possible. These include poorly defined or poorly organized costing categories and unintentional omissions. The Guttmacher report agrees that this is an issue requiring our attention:

"Currently, studies use a wide range of definitions, approaches and methods, making comparability across the studies difficult. Understanding what costs are included and the methodology used to calculate these costs is crucial for interpretation and use of the results…" – p.59 of *Assessing Costs and Benefits Of Sexual and Reproductive Health Interventions.*

Such inconsistencies are significant even when studies are confined to estimating FP service provision components (such as commodities, supplies, labor, and overhead). For example, Guttmacher and the FP Gap Tool begin by using the same methodologies and even the same cost assumptions for each method's labor and overhead costs. Their commodity costs,

[30] Dennis, Suzanna and Mutunga, Clive, Funding Common Ground, Cost Estimates for International Reproductive Health, Population Action International (PAI), April 2010.

however, are tallied differently because Guttmacher combines the cost of FP commodities with the costs of other supplies while the FP Gap Tool includes only the cost of contraceptives. Although some FP methods—such as condoms—have supply costs that are the same either way, this difference in study breadth makes Guttmacher's IUD commodity/supply cost estimates more than 11 times higher than the Tool's commodity price estimates, and of course makes comparisons inappropriate. (Please see Section Two, Issue #3 below for a related discussion on how this difference can spread to other calculations depending on whether one employs dollar estimates vs. percentage estimates.)

There are many other examples of variations in the breadth of cost measurements at the service delivery level: The RHSC's *Contraceptive Projections and the Donor Gap* marks up commodity costs by fifteen percent to account for wastage and transportation[31]. CastCost includes wastage in its conversion factors for pills by assuming that two pill cycles per year will be wasted[32], while many other studies and tools do not make allowances for such wastage. Guttmacher used the UNFPA's Reproductive Health Costing Tool (RHCT) to adjust its 2006 UNFPA raw FP commodity price data upwards for sea freight shipping and condom sampling and testing[33]. All such discrepancies hinder comparisons between studies, and some (but not all) of these discrepancies are summarized in the following table:

Table 2: Summary of FP Service Provision Components in 6 Studies or Tools

Study/Tool: Element	Guttmacher's AIU/RHCT	FP Gap Tool	FamPlan	CastCost	RHSC's "Donor Gap"	Revised ICPD
FP commodities for FP	X	X	X	X	X	X
FP commodities for STI protection					X	X
Commodity testing or wastage	For condoms	Built into conversion factors	Built into conversion factors	For pills	% markup, all methods	X
Commodity shipping/transport	Markup for sea freight shipping				% markup, all methods	Markup for sea freight shipping
Other med. Supplies (significant for IUDs but not for all methods)	X	Not by default but possible	Possible if user combines with	Possible if user combines with		X

[31] RHSC's *Contraceptive Projections and the Donor Gap*, P. 27
[32] P. 32 (Appendix C) of CastCost Manual
[33] AIU Methodology Draft Paper, pp. 28-29

			commodity cost	commodity cost		
Labor/Service Provision	X	X				X
Overhead	X	X				Possible if grouped with other service costs
Other/Hospitalization[34]	Included in 2003 AIU					
User Fees (subtract)			Optional			

When a study also examines program support costs, such inconsistencies become even larger and more significant. The broad category "Program Support Costs" is by nature difficult to define and its sub-components vary greatly from one study to another. Detailed examples of these discrepancies are summarized presently:

The Reproductive Health Supplies Coalition (RHSC) paper stated in 2009 that country investments need to go beyond FP commodities to include; "strengthening

- supply chains;
- service delivery systems; and
- information,
- education, and
- communication activities."[35]

This would appear to be a clear reference to FP program support costs, yet it is not a comprehensive list. The Guttmacher reports endeavored to cost program support components, yet categorized them differently and expanded the list:

- Commodity supply systems
- Health system Infrastructure (cost for maintaining and expanding the physical capacity of health facilities)
- Information Systems
- Health Education
- Program Management
- M&E

[34] Guttmacher presents "Other/ Hospitalization" costs, "…prorated to take into account the typical length of contraceptive coverage from sterilization.", Draft AIU Method Report,
[35] P.5 Box 1, *Contraceptive Projections and the Donor Gap, Feb 2009*

- Advocacy
- HR Training (supervision and training of personnel)

The FP Gap Tool also calculates program support costs, yet categorizes and describes them differently:

- Logistics
- Management Strengthening
- M&E
- Policy and enabling environment
- Training
- Research
- Communications

These three examples sufficiently illustrate one challenge facing FP costing estimates. If we wish to produce comparable estimates of FP program support costs then it would be helpful to reach consensus on what constitutes its sub-components and what terminology best describes these sub-components.

The importance of terminology and precise definitions is best illustrated with the case of logistics. The above three reports presumably refer to the same thing when they claim to examine the cost of “Logistics”, “Commodity Supply Systems”, or “Supply Chain Strengthening”. Yet some readers could confuse “logistics” with “transportation costs” if we are not careful to describe what we are costing. There exists the distinction between the costs of *running* a logistics system and *strengthening* such a system. Running a logistics system as it is currently designed may include the costs of its management, other labor, transportation, and storage whereas the additional costs of strengthening such a system could include investments in new tracking technologies, the costs of bringing in outside expertise from other countries (technical assistance), etc.

Such imprecision causes some confusion in Tanzania’s National FP Costed Implementation Plan. For example, it defines one sub-component as “Contraceptive Security and Logistics”, which appears to group Logistics with Advocacy and Information Systems. Its description includes, "Ensur(ing) sufficient donor and MoFEA funds to cover all public sector contraceptive commodity needs". A reference to Information Systems is also found under logistics; "1d) Develop an automated system to capture facility level logistics data and make it available to district, regional and central level decision makers”. This organization makes it difficult to follow and difficult to compare with other studies. It also exemplifies how sub-components of Program Support can overlap, making them harder to categorize and also more susceptible to double-counting.

As we've observed in other parts of this study, definitions and descriptors help to determine whether studies are comparable. For example, while a study using the FP Gap Tool may attempt to cost "Logistics" as it relates program support for improving a logistics system, other studies such as the RHSC study tally "logistics" costs only as they relate to actual transportation costs.

The below table summarizes all of the above-mentioned differences in FP program support component definitions and terminology:

Table 3: Summary of 4 Sets of FP Program Support Component Definitions and Terminology

Study or Tool:	RHSC "Donor Gap"	Guttmacher "AIU"	FP Gap Tool	Tanzania
M&E	not mentioned, unless you count "strengthening information systems"	"M&E"	"M&E"	"Management Systems and M&E"
Management Systems	not mentioned	"Program Management"	"Management Strengthening"	
Health Education	"Education"	"Health Education"	"Communications"	"Demand Generation"
Advocacy	not mentioned	"Advocacy"	"Policy and Enabling Environment"	"Contraceptive Security and Logistics"
Logistics	"Supply Chains"	"Commodity Supply Systems"	"Logistics"	
Information Systems	"Information Systems"	"Information Systems"	not mentioned	
Research	not mentioned	not mentioned	"Research"	not mentioned
HR Training	"HR Training"	not mentioned	"Training"	not mentioned, unless that's what they meant by "Capacity Building"
Health Systems Infrastructure	not mentioned, unless you count "Information Systems"	"Health Systems Infrastructure"[36]	not mentioned	not mentioned, unless that's what they meant by "Capacity Building"

[36] "Costs for maintaining and expanding the physical capacity of health facilities"

- Issue #2: Calculating program support costs

Even after program support costs have been clearly categorized and described, there remain challenges in estimating or calculating them. The FP Gap Tool uses the "top down" approach to roughly estimate program component costs and provides these as default estimates. They are based on actual costs from recent USAID projects in "average" developing countries and were collected by interviewing USAID project managers[37]. Each subcomponent such as M&E, advocacy, and logistics has been handled by various USAID contractors who provided their annual country-specific budget numbers to the USAID Health Policy Initiative (HPI). The tool, however, instructs users to collect their own country-specific program support costs whenever possible.

For example, the USAID|DELIVER Project provided actual annual costs for their efforts promoting improved logistical systems in two "average" countries. Once each USAID contractor's cost estimate had been added to the total we found that program support costs equal roughly ten percent of total costs in donor dependent countries. This percentage and, of course, the actual dollar figures will vary from country to country but the model provides default guidance in the hopes that it will be a helpful reality check against the user's country-specific numbers.

Guttmacher utilized a different approach to calculating systems strengthening costs and their estimate (US$ 2.5 billion) comes to 37 percent of total costs ($6.7 billion). Guttmacher defined its support cost components according to UNFPA guidelines, which in turn were derived from World Health Organization (WHO) estimation of program and systems costs needed for scaling up interventions to attain universal coverage of maternal and newborn health services[38]

The UNFPA estimates did not distinguish between program and systems costs specific to family planning vs. maternal health. *AIU* estimated total costs of each of these areas of care by taking the ratio of program and systems costs to total direct costs for family planning and for maternal health from the UNFPA estimates. Guttmacher applied the same ratio to the direct cost estimates for family planning and for maternal and newborn health to estimate the program and systems costs, and the total costs, for each area of care. *AIU* estimates of the total costs of care actually provided in 2008 used the UNFPA 2008 program- and systems-related percentages for each region. For the scenarios in which 100% of service needs are met, AIU used the 2009 percentages from the revised ICPD estimates. While the 2009 percentages are higher than later years, AIU used the 2009 levels as the best representation of the near-term health infrastructure investment needs, given that AIU's scenario is based on all service needs being met in the near-term. AIU considered using cumulative or average program and systems costs 2009-2015 by region, these include both ongoing costs, such as staff supervision and health

[37] This author conducted the research via email for USAID|HPI during 2010
[38] Adding It Up Methodology Report, DRAFT, p.34.

education activities, and one-time costs, such as construction of facilities and establishing commodity supply systems but decided to use 2009, the year of the highest proportional program and systems costs as best representing the near-term challenge of ramping up services to fully meet family planning and maternal and newborn health care needs.[39]

- Issue #3: Estimating one cost as a percentage of another cost

When estimating the costs of FP labor, overhead, and program support components it is common for studies and tools to calculate them as a percentage of other more readily-available costs. Such percentage relationships may be based on observations of regional or global data or based on some other study that provides a roughly comparable relationship between one cost and another cost. Using percentage estimations is particularly convenient when attempting to calculate the costs of components—such as overhead costs—for multiple countries where data may not be readily available and where collecting a large volume of new data would be prohibitively difficult. Here are some pros and cons of using this method when calculating costs, followed by real examples that demonstrate the pitfalls and advantages of using percentages:

Pros: The pros of calculating components such as labor, overhead, or other components as percentages of total cost are that the calculations are simple, fast and flexible. When total costs for FP commodities and labor change for valid reasons such as for inflation, country-specific price structure, or increased number of users and acceptors, overhead costs can rise proportionately when calculated as a percentage of total costs. When applied to a range of countries, percentage calculations can help a study to adjust costs in relation to the general price levels observed in each country. For example, a country with cheap labor and lower cost commodities would generally be expected to have lower cost overhead and other costs as well, so calculating overhead as a percentage of commodity and labor costs could be appropriate and convenient.

Cons:

1. One pitfall of using percentage formulas is that they exacerbate any data mistakes or inconsistencies in one part of an analysis by allowing them to spread to other parts of the same analysis. Independently collecting data on each FP component cost—although more time consuming and tedious—lowers the probability that mistakes in one portion of a study will be compounded.

2. Even if the ratio between one cost and another cost has been well researched at any one point in time, relationships may change over time and across different countries and circumstances. There remains the distinct possibility that some of these relationships are dependent on so many factors that they may be impossible to even roughly approximate into one percentage across multiple countries.

[39] Adding It Up Methodology Report, DRAFT, p. 35

a. Some such relationships appear more robust and consistent than others. For example, calculating pill wastage as a percentage of total demand for pills appears to be a relationship that would not fluctuate much across countries nor time periods. One might suspect, however, that overhead costs as a percentage of commodity and labor costs could prove highly irregular across countries and time periods. For example, ten years have now passed since the UN study that provided average estimates of labor and overhead as a share of total FP service provision costs. It may be reasonable to assume that during this decade labor and overhead costs rose faster than did commodity and supplies costs, thereby increasing labor and overhead's shares of total costs.

b. Using again the example of the UNFPA study upon which Guttmacher based average estimates of labor and overhead as a share of total costs—the percentage estimates may be based on a handful of studies that looked at overhead and capital costs and these studies were mainly richer countries like Turkey, Mexico etc. where labor and overhead costs are higher. Facility and admin overhead costs in countries like Ethiopia are much lower than 72 percent of total costs, according to one experienced FP costing expert[40].

3. A percentage relationship can appear fresh forever while dollar figures appear more and more dated as time goes by. One may observe studies and models that have kept percentage calculations constant for more than a decade, even though these percentages are based on old data. Dollar cost estimates, on the other hand, are more likely to raise eyebrows if they are cited more than ten years after the original data was collected.

4. In tools where the user is given default data and the option to override the default data, users are more likely to override cost data presented in currency terms than they are to override a default percent estimate.

An example from the FP Gap Tool will serve to illustrate Con #1: Earlier in this paper we observed that *AIU* and the FP Gap Tool define IUD commodity costs differently, which lead Guttmacher to estimate IUD commodity/supply costs at more than 11 times the FP Gap Tool's estimates. The significance of this difference in IUD commodity/supply costs could then compounded if the FP Gap Tool were to calculate overhead costs as a percentage of total (commodity+labor+overhead) costs. The first version of the Tool copied Guttmacher's percentage relationship estimates[41], and produced lower overhead cost estimates because these are calculated as a percentage of a smaller total cost. Later the Tool was revised to avoid

[40] Email from Eva Weissman, June 1 2011. Ms. Weissman helped to build the UNFPA database.
[41] which in turn are based on a 2001 UNFPA survey of relevant studies worldwide

this problem by calculating overhead as a percentage of labor costs only. Labor cost estimates, in turn, are copied in dollar terms from Guttmacher's report. The following table illustrates how the inconsistency in FP commodity definitions and costs could cascade to overhead costs and to total costs via the percentage calculation methodology:

Table 4: Comparison of 2001 IUD Cost Calculations per IUD Acceptor

Component	Guttmacher (2001)	Version #1 of FP Gap Tool[42] (pre-inflation adjust)
FP Commodities		$0.37
FP Commodities + other supplies	$4.05	
Labor ($ per year)	$3.35	$3.35
Overhead ($ per year)	$19.03	$9.57
Overhead (% of total)	72%	72%
Total Annual Cost:	**$26.43**	**$13.29**
% Difference between Gutt/Tool:	Gutt. overhead and total results are approx. 2 times bigger!	FP Gap overhead and total cost estimates are half of Gutt's!

This example of how methodological variations in study breadth can produce ripple effects via the percentage calculation methodology teaches us valuable lessons:

a) Analysts should carefully document and examine component definitions before assessing the comparability of cost data.

b) Variances in one component's breadth or definition can spread to other components when the later are calculated as a percent of total costs.

c) Given the potential for unintentionally producing such ripple effects, each study should consider these pros and cons of using currency-based cost estimates vs. percentage-based formulas.

Con #2 raises the question of whether it is appropriate to assume that overhead costs maintain their proportional relationship with commodity, supply, and labor costs. The fact that Guttmacher's original cost assumptions, which are based on 2001 UNFPA Costing Initiative data, are used to feed the 2011 FP Gap Tool, 2008 *AIU* report, and other recent studies makes this question even more relevant. In 2003 Guttmacher analysts inflated all of their 2001 dollar estimates by 4 percent to account for two years of inflation. If the changing purchasing power of the US Dollar were the only issue, then this uniform inflation adjustment would appear reasonable. However, over a period of ten years since the original data were collected, the real costs of FP commodities and medical supplies were more likely to fall over time while labor and overhead costs probably rose along with general inflation. If any of these prices were to move

[42] Again, this problem only occurred during the first version of the FP Gap Tool and has since been eliminated.

in a direction different than the direction of general inflation, the percentage ratio between any two costs could change significantly over time.

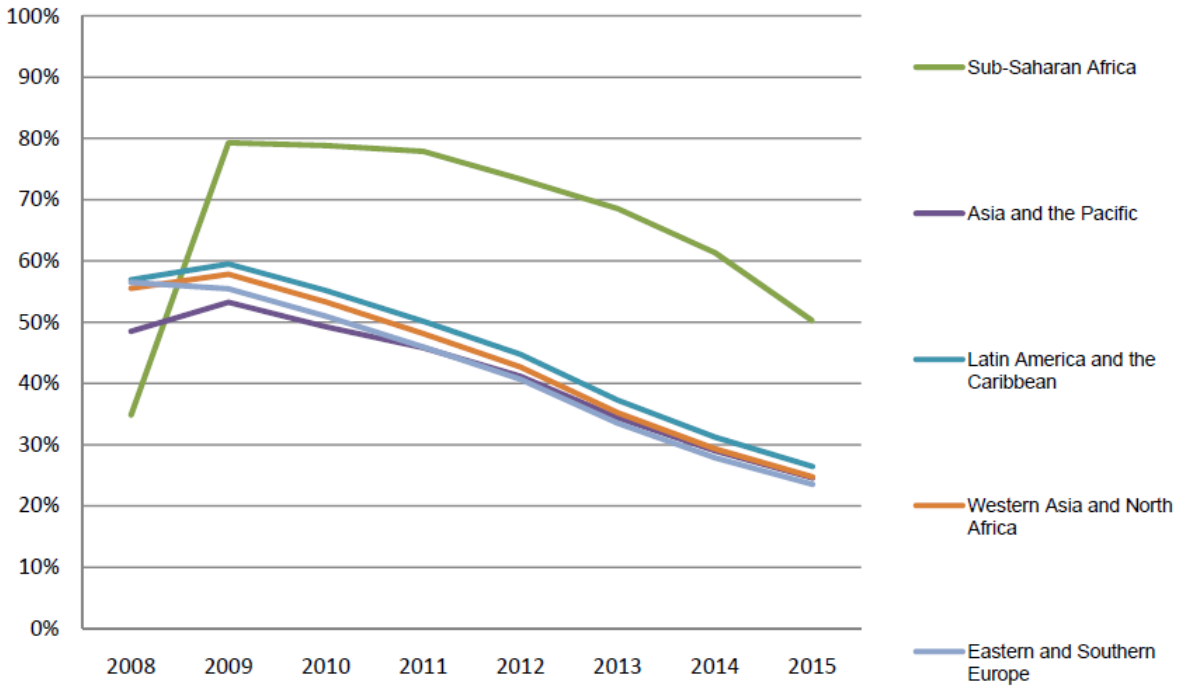
Evidence also suggests that program and systems-related cost relationships to total FP/RH costs are even more time and location-sensitive. The below chart displays UNFPA estimates based on the WHO estimation methodology to calculate new regional program and system costs. The UNFPA developed variable timing schedules for program and system investments based on per capita GDP, with the assumption that the poorest countries would require more time to ramp up these resources. Country estimates were aggregated into regional estimates of the percentage of total costs associated with programs and systems. The percentages of total sexual/reproductive health/family planning costs that were program and systems costs used in UNFPA's revised ICPD cost calculations are shown in the below Chart #2.

2008 spending on program- and systems-related costs is estimated at 35% of total sexual/reproductive health/family planning costs in Sub-Saharan Africa and 49-57% of total costs in the other developing regions. This reflects the fact that, in general, health infrastructure is less developed in Sub-Saharan Africa than in other parts of the developing world. The UNFPA estimated that by 2015 program- and systems-related costs will fall to about one quarter of total costs, except in Sub-Saharan Africa, where they will be at 50% of total costs. The shapes of the curves over time reflect timing of capital expenditures and associated recurrent costs following construction. However, projections of future program and systems costs are predicated on prior years' investments at the levels shown above since much of the needed investment, especially in Sub-Saharan Africa, is needed for constructing, as opposed to maintaining, health infrastructure. [43]

As the chart shows, these estimates adapted from WHO data with the adjustments described above assume that health infrastructure expenditure needs related to sexual and reproductive health services will rise quickly and much more steeply in Sub-Saharan Africa than in other regions. [44]

[43] Adding It Up Methodology Report, DRAFT, p. 35
[44] Adding It Up Methodology Report, DRAFT, p. 35

Chart #2: **Program- and systems-related costs as percentage of total sexual/reproductive health/family planning costs, 2008-2015**



Source: UNFPA calculations as presented by Guttmacher Institute's *AIU* Draft Methodology Report

With these examples in mind, we must conclude that any tool or study that assumes the relationship between two costs will remain constant across time and space risks misrepresenting the true percentage relationships between and among costs.

Considering Cons #3 and #4, it is also noteworthy that as more recent data on individual cost elements—such as condom unit costs or labor—become available the FP Gap Tool allows users to override Guttmacher's original cost assumptions, but users may be less likely to override percentage defaults than they would be to override dollar cost estimates.

- Issue #4: Calculations using couple-years of Protection (CYP) vs. users/acceptors

After studies estimate demand for FP and estimate unit costs, study authors are faced with a methodological question: Whether to multiply the estimated number of users/acceptors by an average cost per user/acceptor or whether to quantify FP demand in couple-years of protection (CYP) terms and then multiply CYP demand by the cost per CYP. This methodological choice raises the following questions:

1) Which studies used which methodology?

2) Do these two methodologies produce differing results?
3) What are the pros and cons of using each methodology?

All the studies reviewed in this background report calculated FP costs by multiplying the number of users or acceptors of each method by the (annual) cost per user or (multi-year) cost per acceptor for each method[45].

Guttmacher slightly altered this methodology to compensate for its short time frame. The *AIU* report divides LAPM multi-year costs by the number of years the method will last after estimating a multi-year cost per acceptor. For example, because the *AIU* time horizon is only a single year, it divides total IUD costs by 3 to create an "average" annual cost. Guttmacher's total IUD costs were: "$4.05…based on visit costs for insertion, follow-up and removal… $2.50 for IUD insertion…$1.02 for follow-up visit, and $0.53 for removal visit..." Guttmacher used a similar logic for labor and overhead costs[46].

AIU exemplifies the first problem of using the "user/acceptor methodology": When the time horizon is very short (especially when it is a single year like *AIU*) using the full (multi-year) cost per acceptor front-loads or overstates the true costs incurred that year. If the study time period is long then this effect diminishes over time, but if all 3+ years of costs are applied to all acceptors in study with a short time horizon then long-term method costs can be significantly overstated. Guttmacher compensated for this problem by dividing long term method costs by the duration of the method (3 years for IUDs) and thereby adjusted for this front-loading of long-term method costs, but it would be informative to examine whether any 5 year studies, for example, have attempted to make such an adjustment.

By contrast, using a "cost per CYP methodology" carries no risk of front-loading long term and permanent methods (LTPM) costs because by definition costs per CYP have already been averaged across the duration of the method. This can lead to the problem of skewing LTPM costs into the future because it does not reflect the reality that most LTPM costs are incurred during the first year of acceptance. As with the "cost per user/acceptor methodology", such issues become less significant the longer the duration of the study.

The "user/acceptor" methodology is preferable whenever a study is attempting to budget for actual costs for a particular year. For example, if a government wishes to know how much money it will need in the first year of an IUD campaign, one must tally the *actual* costs of IUD insertions and follow-up visits during the first year (regardless of the fact that these will provide protection for multiple years). Multiplying full IUD costs by the number of acceptors will more closely approximate a program's actual costs.

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[45] http://www.healthpolicyinitiative.com/Publications/Documents/1256_1_FampmanE.pdf FamPlan user manual p.108
[46] P. 40

In theory either calculation methodology should produce the same cost results if the study time horizon is longer than the longest LTPM—*ceteris paribus*. In other words, any study longer than 9 years should produce the same total cost results using either methodology…although the distribution of these costs over the years will not be the same.

In the real world we observe that *ceteris paribus* never occurs and cost estimates can vary dramatically for reasons beyond the distinction between methodologies. Analysts calculating global FP costs for the *World Population Prospects and Unmet Need for Family Planning* study noticed large differences between building total costs using cost per CYP versus building the same totals by multiplying the number of users by Guttmacher's "average global" annual cost per user. Their experience was informative…

World Population Prospects multiplies number of users or acceptors of each method by Guttmacher's average worldwide cost per user or acceptor for each method.[47] Guttmacher analysts produced method-specific cost per user/acceptor averages because, "available data did not support making country or region-specific cost estimates for each method. While the aggregate estimates are broadly representative because they are based on studies in many countries, local-level costs will vary due to other factors, such as start-up costs and economies of scale." [48]

Table 5: Comparison of 2005 LAC Region FP costs using two methodologies:

Description	CYP Methodology	Users/acceptors Methodology
Women of Reproductive Age (millions, as calculated using FamPlan)	145	145
CYPs for all IUD acceptors (millions)	4.7	n/a
CYPs for all methods (millions)	42	n/a
$/CYP for IUDs (from Futures Institute compilation of studies)	$16.54	n/a
IUD total costs (US$ millions)	$77.2	(not calculated by method)
Total costs, all methods (US$ millions) ($77.2 million of IUD total costs+ total costs other methods)	$713	(see below red for comparison)
FP users in LAC (millions)	n/a	66.5
$/user (Guttmacher, LAC region)	n/a	$27.60
users times $/user (US$ millions)	n/a	$1,835
% difference between 2 results:	Only 39% of other methodology!	More than 2.5 times larger than other methodology!

[47] Vlassoff et al, P.46
[48] Vlassoff et al, P.46

Reasons why "Users/Acceptors methodology" produces a much higher estimate than does "CYP methodology"[49]:

1) "Users" is based on Guttmacher global estimate of dollars per user, which includes far more cost components than does the "CYP methodology" data from Futures Institute
    a. "Users" is based on a 2003 Guttmacher global estimate of dollars per user, which we have seen includes more cost components than does the average study (see Table 2 costs for components that were included) Guttmacher included, for example, IUD supplies which doubled its cost estimate for the IUD method and also included costs for hospitalization following sterilizations.
    b. Guttmacher fully includes all supplies and all overhead costs for all methods whereas Futures Institute takes median cost of a range of studies, some of which include fewer costs components.
    c. Additionally, Guttmacher calculated overhead as a percent of total costs thereby making its high cost estimates even higher.
2) Differences in sources of original cost estimates
    a. Guttmacher's method-specific estimates are based on range of studies across the globe that were collected by the UNFPA in 2001. Futures Institute bases its method-specific estimates on the median cost of a LAC-specific sample of studies.

- <u>Issue #5: Handling missing data</u>

Most regional or global studies must deal with the fact that data availability varies across countries. When, for example, the percentage of WRA who are in union is available in most but not all countries, the analyst may decide to fill-in the missing data by:

1) Using the regional or sub-regional un-weighted average
2) Applying a comparable country's data
3) Other methods

Guttmacher's *AIU* handled this issue by first searching for MWRA numbers in DHS, if not then National Survey, if not then Ross J, Stover J and Willard A, *Profiles for Family Planning and Reproductive Health Programs*, if not then UN Marriage Database, if not then un-weighted

[49] Why time period is not an issue: Normally we would observe that the longer the study's time period becomes, the less variation in results will occur. In this example, however, the percent variation in results is not dependent at all on the study time period. This is because we are using average cost per user across all methods, rather than the more standard approach of separating cost per user and cost per acceptor.

average distribution from countries in the sub-region with DHS surveys or from a similar country[50].

Filling data gaps by using a logical progression of available data sources—starting with the most reliable, internationally-comparable and comprehensive source and later filling-in gaps with other available sources—appears to be a sound methodology. When, however, none of these sources can provide country-specific data, then it may be worth researching what factors best correlate with the missing variable. If geographic location actually correlates with the missing data variable, then taking the sub-region's un-weighted average of that variable may be justified. If, for example, a country's per capita GDP proves better correlated with the missing variable (such as average life expectancy) then taking an un-weighted average of countries with a similar GDP per capita might be more appropriate.

- Issue #6: Taking into account differences in service delivery

This paper does not fully explore the various ways to model differences in service delivery modes, locations, and personnel. Some costing tools and studies attempt to account for such differences, and the more granularity a study is able to achieve, the better. Such granularity could include:

A) Distinguishing between price levels and resource requirements in rural vs. urban environments.
B) Modeling the differing resource requirements for various service delivery modes, including clinics, community-based delivery (CBD), pharmacies, mobile clinics, etc.
C) Labor costs may vary depending on how nurses, CHWs, and doctors perform services. For example, if nurses or CHWs are allowed to give injections this may reduce the labor costs associated with injectable service delivery.
D) Health financing methods may affect costs in predictable ways such as when results-based financing (RBF) creates incentives to cut costs or when availability of insurance or subsidized services influences behaviors.
E) Public and private sectors deliver services at different costs and taking into account differences between the two sectors may improve the accuracy of cost estimates.

Section 2A: Methodological challenges facing studies that cover longer time periods

As noted in Table #1, the time periods covered by the FP costing studies in this background review range from instantaneous/static (Guttmacher), 20 years (RHSC's *Contraceptive Projections and the Donor Gap)* all the way to 45 years (Futures Group's *World Population Prospects and Unmet Need for Family Planning*). The tools reviewed in this background paper are all flexible enough to calculate costs from one year to any number of years. Many

[50] ***Assessing Costs and Benefits Of Sexual and Reproductive Health Interventions,*** Michael Vlassoff et al, **Occasional Report No. 11,** December 2004, p. 65

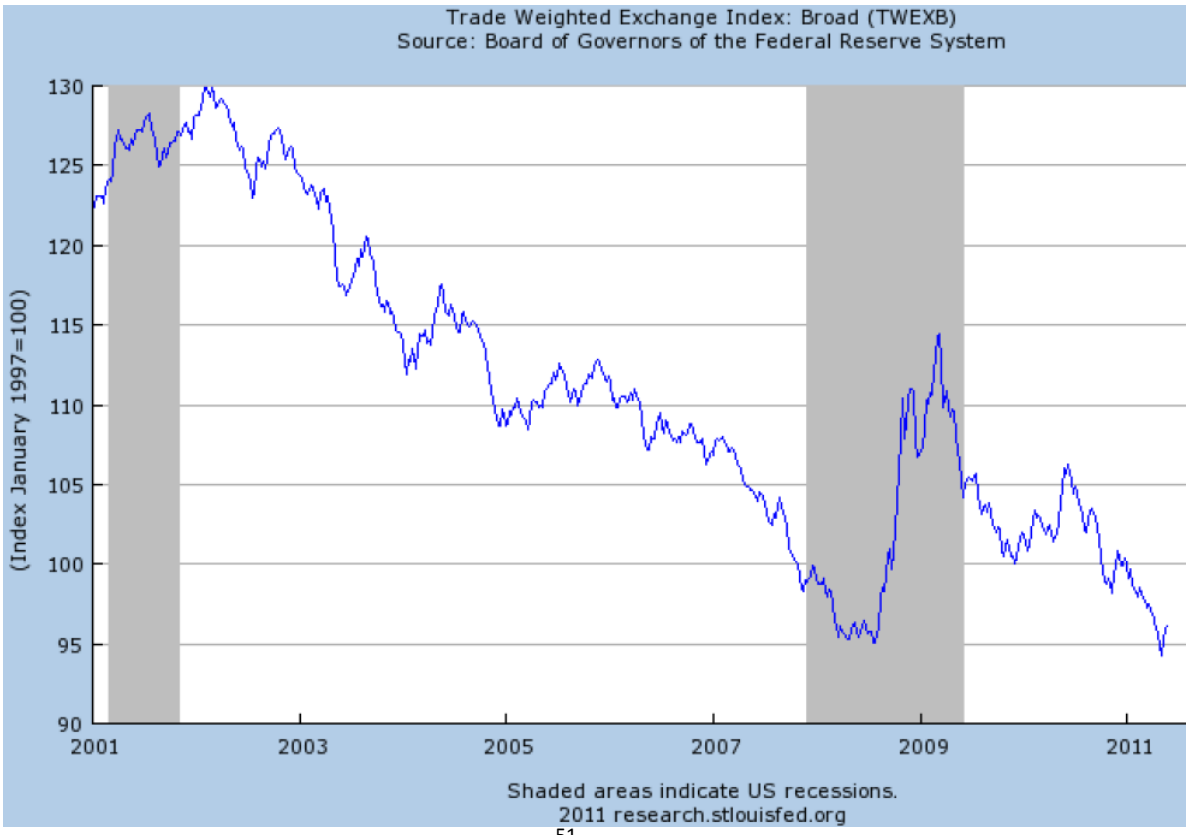
methodological issues surface as the study period increases in length. These include all of the remaining bullet topics….

- Issue # 7: Historical exchange rates

Costing studies do not usually take into account the often massive effects of past exchange rate fluctuations over time. All of the studies examined here take into account exchange rates at only one point in time, usually the point in time when raw costing data is collected. Here we examine the importance of taking into account exchange rate fluctuations between the time raw cost data is collected and the time it is used.

Guttmacher's *AIU* uses UNFPA data on various FP costs collected in 2001 from various countries and (presumably) converted them to US dollars at then-prevailing market exchange rates. Other studies which cite Guttmacher (including the FP Gap Tool's citing of Guttmacher labor costs and *World Population Prospects'* citing of Guttmacher's regional average costs per user/acceptor) therefore also are partially basing their estimates on data that was originally collected in local currencies and then converted to US dollars on or before 2001. However, let us examine what has happened to the US dollar's value relative to a broad (global) basket of currencies since 2001…

Chart #3: US Dollar's Broad Trade-Weighted Exchange Rate Index, 2001-2011



Source: US Federal Reserve Bank, St. Louis[51]

The above chart shows that relative to a broad (global) basket of currencies, the US dollar lost more than a quarter of its value between 2001 and 2008. The chart also shows that by 2011 the US dollar had again touched the same low value that it had reached in 2008. Yet despite the fact that *AIU* was published in 2008 and *World Population Prospects was published in 2010*, they make no 25 percent adjustment to their US dollar global estimates. This would indicate that, *ceteris paribus*, these two studies have underestimated the US dollar global costs of FP by roughly 25 percent. The goods and services that the studies examine will cost more US dollars than they used to cost…not just because the US dollar has lost purchasing power relative to a basket of US goods and services (inflation, see Issue #12 below), but also because the US dollar has lost purchasing power relative to other global currencies.

This issue can be resolved one of two ways: 1) We may control for the effects of global currency fluctuations at the end of an analysis. In the case of AIU or *World Population Prospects* we may adjust the final US dollar estimates upward to make up for the 25 percent fall in the US dollar. Or… 2) We may keep raw cost data in local currencies and inflate these numbers over time using the GDP deflator specific to the country, then convert these local currency estimates to US dollars using market exchange rate(s) at the year of the analysis.

[51] http://research.stlouisfed.org/fred2/graph/?s[1][id]=TWEXB# website accessed June 1, 2011

When a study relies on raw data collected years earlier, this issue becomes significant. We have seen that such cases are common and that failing to take into account fluctuations in the international value of US dollars (the real trade-weighted exchange rate of the US dollar), can skew the results of a study more significantly than can inflation or even demand for FP.

- Issue #8: The time value of money (TVM)

When a study estimates costs for more than one year, accounting for the opportunity cost of spending that money becomes increasingly important over time. A dollar spent today is worth more than a dollar spent next year, not solely because of inflation (see below Issue #12) but also because spending the dollar today eliminates the opportunity to spend it elsewhere. To control for this it is important to apply a discount rate equal to the amount of real interest the money might have collected on deposit at a bank. It is best to use the real interest rate that the spender would have been most likely to experience. In the case of the Government of Nigeria, this would be the real interest rate in the Nigerian banking sector, whereas in the case of international donors this might be the real interest rate on US dollar certificates of deposit.

Only when the time value of money (TVM) has been taken into account can governments or donors correctly compare, for example, the costs of funding ten couple-years of protection (CYPs) from a condom program versus a one-year sterilization program. Because roughly 9/10ths of the costs of a decade of condom provision occur after the first year, a condom program will appear cheaper after taking into account the TVM. Likewise, a sterilization program which provides protection against pregnancy for an average of 10 years may appear more expensive after taking into account TVM, since all of the costs of sterilization occur up-front.

- Issue #9: How to model method mix over time

A country's method mix changes over time, and all the models reviewed allow analysts to assume method mix will evolve. The question is, how will it evolve, and how can we forecast its evolution?

World Population Prospects and Unmet Need for Family Planning modeled change in method mix to the extent that users shift from traditional to modern methods. This shift carried with it large financial implications, as it was assumed that traditional methods cost nothing while a regional average cost per user was applied to all modern methods users. Because the study used a regional average cost per user (as cited in a Guttmacher Institute paper[52]), there was no scope for modeling changes in modern method mix. *World Population Prospects* modeled traditional vs. modern method acceptance and used DHS data to perform regression analyses of the method-specific CPR, with education and urbanization as independent variables, as well as a dummy variable for Muslim countries. However, often the independent variables were not statistically significant. Therefore they calculated the average annual change in the modern CPR

[52] Vlassoff, p.101

for countries and used regional averages to project the proportion of modern users among all users. Their results are copied here:

Table 6: Average Annual Change in the Percentage of All Users Who Use a Modern Method in Countries with More than One DHS, by Region

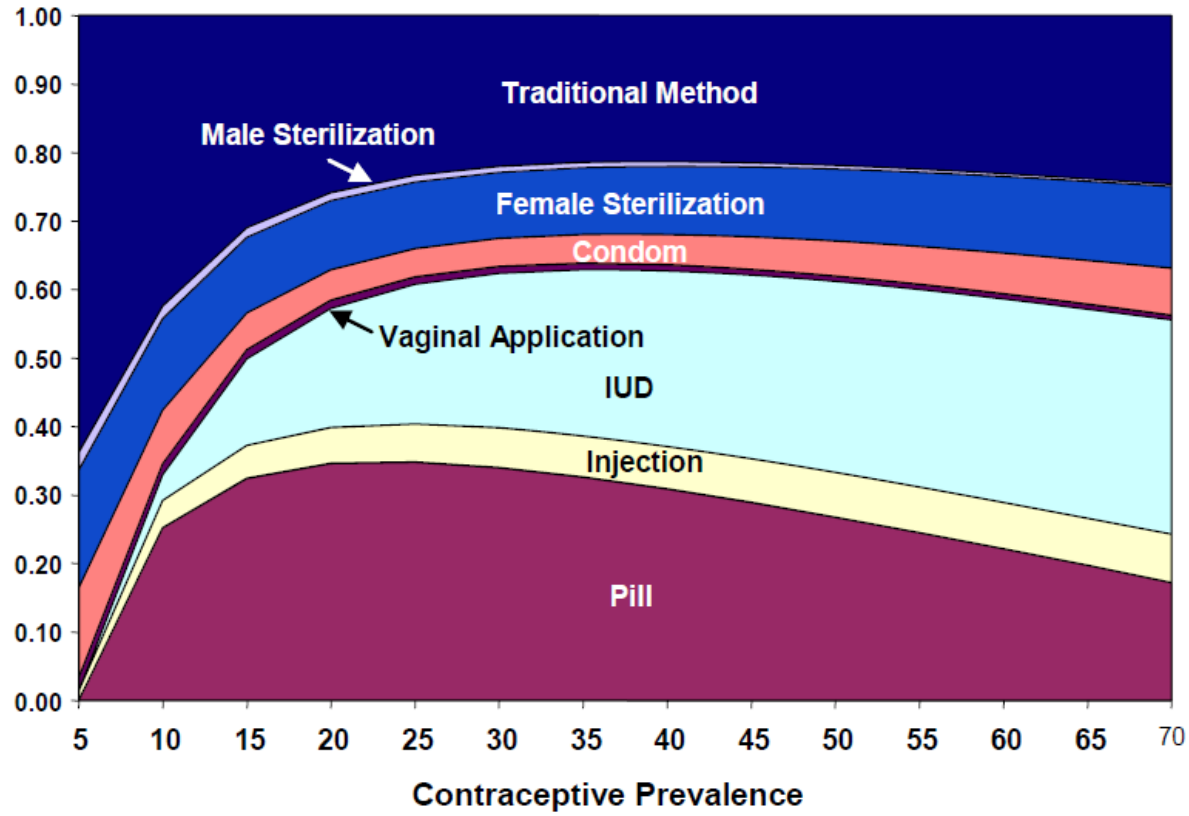
Sub-Saharan Africa	1.71
North Africa, West Asia, and Europe	0.02
South & Southeast Asia	0.00
Latin America & Caribbean	0.65
India	0.02

The RHSC's *Donor Gap* study provides the most sophisticated example of modeling changes in method mix over time. It does not assume that method mix remains constant over time as CPR increases, but rather uses data from all DHS to estimate a set of regression equations estimating the proportion of all use that is captured by each method as a function of total contraceptive prevalence. The relationship is nonlinear, so the equations use both CPR and CPR-squared as independent variables. The authors prepared two sets of equations—one for Muslim countries and one for all other countries—to reflect the fact that sterilization is used less often in Muslim countries than elsewhere.[53]

The FamPlan Model's User Manual discusses the proximate determinants of changes in method mix, and how method mix has historically changed in relation to CPR. Below are two illustrative charts taken from the FamPlan User Manual. They are based on information in a set of 273 national surveys from 101 countries[54].

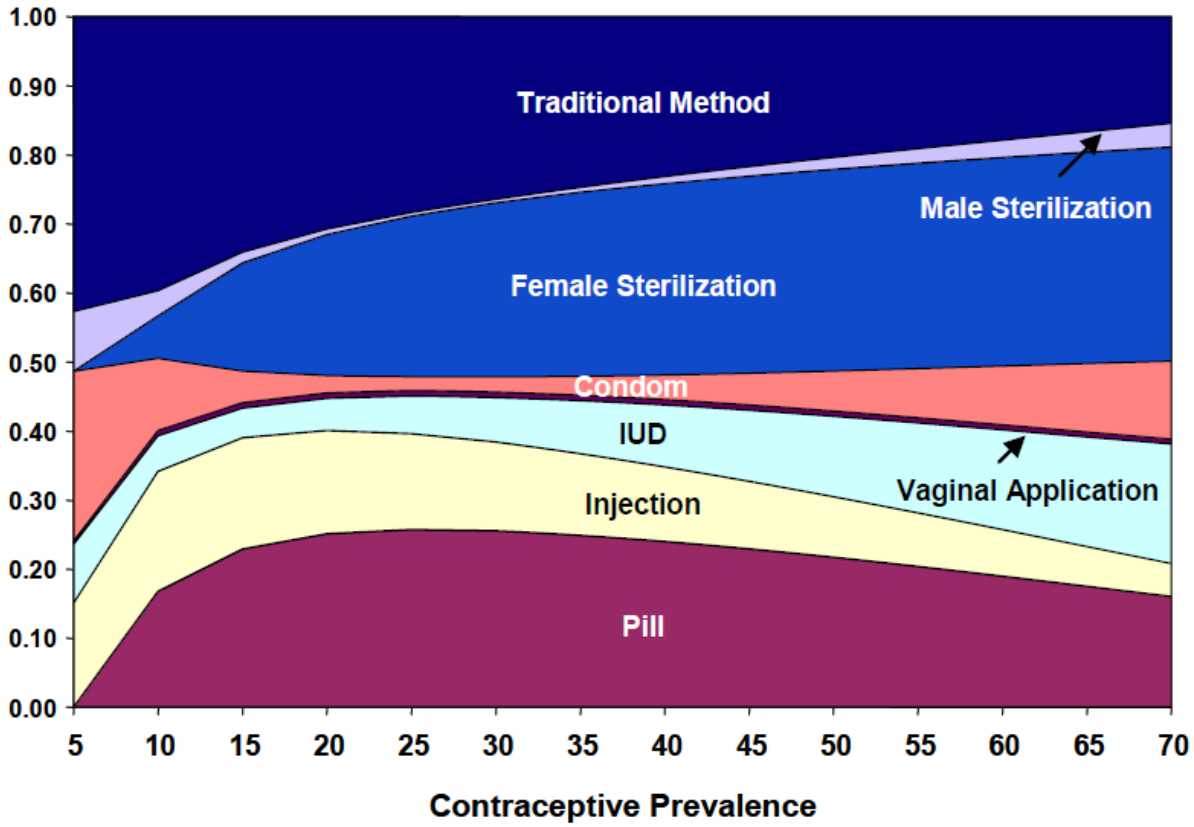
[53] Ross, John and Weissman, Eva and Stover, John. Reproductive Health Supplies Coalition (RHSC), *Contraceptive Projections and the Donor Gap*, Meeting the Challenge, February 2009, p.25
[54] FamPlan User Manual, p.32

Chart 4: Method Mix in Muslim Countries



Source: The FamPlan User Manual, p. 32.

Chart 5: Method Mix in Non-Muslim Countries



Source: The FamPlan User Manual, p. 33.

When a study tries to help policymakers to understand the implications of future method mix it can also be useful to present more than one scenario. After observing the different costs associated with promoting one method more than another method, policymakers can make better-informed decisions on which method(s) to promote.

- Issue #10: Cost implications of economies of scale or technological advances; component-specific (micro) price inflation/deflation

Of all the studies reviewed we find only one that reflects the general trend that annual unit costs per contraceptive user tend to fall due to economies of scale and due to improved technical performance and specialization of the relevant institutions. This is the 1994 Cairo report titled "The Cost of Reproductive Health", as reviewed in Guttmacher's background paper[55]. FamPlan provides the option of factoring in lower costs per user over time. *World Population Prospects and Unmet Need for Family Planning* assumes the real costs per user will

[55] P.20

remain flat over time as do most other reports. The FAMPLAN model has an option that allows the user to select an option to include economies of scale when calculating program or national FP costs. This option allows the costs per user to decline as CPR increases.

Some prices can also fall due to technological advancements or other industry-specific characteristics. Computers serve as the classic example of this phenomenon—the price of any given amount of computing capacity or information storage capacity clearly tends to fall over time. This appears to be the case with some FP technologies as well, despite the fact that most studies apply an inflation factor equally to commodities, labor, and overhead. Instead of assuming that FP commodity prices will tend to rise along with general inflation, we should consider de-linking inflation from the commodity portions of our analyses, or even adding a deflation factor instead of assuming that inflation treats all components equally.

- Issue #11: Macro (General) Price Inflation

Making appropriate decisions on whether and how to adjust numbers for inflation is mostly dependent on a study's original data sources and intended audience. Inflation adjustments become more important and significant the longer the duration between the study's raw data collection and start year. For the 2008 *AIU* report, for example, 7 years passed between the collection of its key raw cost information via the UNFPA in 2001 and its base year calculations in 2008. Current tools that also rely on this 2001 UNFPA cost data such as the FP Gap Tool must adjust the data for ten years of inflation.

We should note that when adjusting for inflation in global studies or developing country studies the most appropriate deflator is probably the US GDP deflator, not deflators linked to US consumer prices such as the U.S. Social Security Administration annual Cost of Living Adjustments[56] or consumer price indexes (CPI). Recipients of US dollars around the globe (and large US-based donors for that matter) are not concerned with whether their US dollar budgets can buy a basket of US consumer goods and services (what the CPI measures), but are more concerned with the broader purchasing power of the US dollar.

When estimates do adjust for general price inflation it is important that they explicitly cite the assumed inflation rate and calculate it correctly. Many studies assume that the US dollar loses two percent of its purchasing power every year, which is a reasonable assumption based on the experience of the average US consumer during the 1980s, 90s, and 00s. More recently the world has witnessed unusually low levels of US dollar inflation and many analysts expect to see unusually high levels of inflation in the near future, so it is perhaps becoming more important to make inflation assumptions explicit and empirically-based.

If, for example, the study is Tanzania's National Family Planning Costed Implementation Plan, then it makes the most sense to convert everything into Tanzanian Shillings, adjust prices using a Tanzania-specific deflator (preferably a health-sector specific CPI, if not then a Tanzania GDP

[56] Used by Guttmacher for Adding It Up and in the ICPD revised estimates, according to Methodology Note p. 28

deflator, if not then a Tanzanian CPI). Only at the end of the study should prices then be converted to US dollars for the convenience of foreign readers such as researchers, development partners or potential donors.

A reminder when calculating any inflation rate: the effect of compounding inflation…
Table 7: Comparing methods of calculating 2% annual inflation for IUD labor:

Year	Textbook Calculation	Guttmacher calculation	Gap Tool Calc.
2001 (orig. UNFPA data)	$3.35	$3.35	$3.35
2002	$3.42 (prev. yr x 1.02)		
2003 (Gutt. base yr)	$3.49 (prev. yr x 1.02)	yr2001 x 1.04 = $3.48	
2004	$3.56 (prev. yr x 1.02)		
2005	$3.63 (prev. yr x 1.02)		
2006	$3.70 (prev. yr x 1.02)		yr2001 x 1.1 = $3.69
2007	$3.77 (prev. yr x 1.02)		
2008	$3.85 (prev. yr x 1.02)		
2009	$3.93 (prev. yr x 1.02)		
2010 (Gap Tool base yr)	$4.00 (prev. yr x 1.02)		
2011	$4.08 (prev. yr x 1.02)	yr2001 x 1.2 = $4.02	yr2001 x 1.2 = $4.02
…2021	…$4.98	yr2001 x 1.4 = $4.69	yr2001 x 1.4 = $4.69

As this table illustrates, taking the 4% inflation[57] shortcut when referring to two years of 2% inflation is acceptable and produces only a penny difference in outcomes by 2003 or 2006. However, if this shortcut were employed over the period of a decade, the difference would start to become significant (6 cents by 2011, 29 cents by 2021, $1.37 by 2041, etc.) and it is multiplied hundreds of thousands of times by the number of IUD acceptors. Clearly the more years that are covered by a study, the more important it becomes to adjust for inflation using the standard textbook methodology.

- Issue #12: Modeling Contraceptive Prevalence Rates (CPR) over time

Many studies project an increase in CPR over the duration of the study, yet there are many ways to model such an increase over time. From the current CPR to the end CPR, rates can follow a straight-line path, an inverse "U", a "U", or an "S" path. Each of these scenarios will result in different overall costs. Experts should try to reach a consensus on best practices for handling this issue.

[57] Vlassoff et al, 2004, p.40

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