

World Health Organization  
Division of Reproductive Health  
and  
The World Bank  
Human Development Department

**Informal Meeting on  
The Role of Financial and Economic Analysis on  
Reproductive Health Project/Programme Development**

19 November 1996  
Washington, DC



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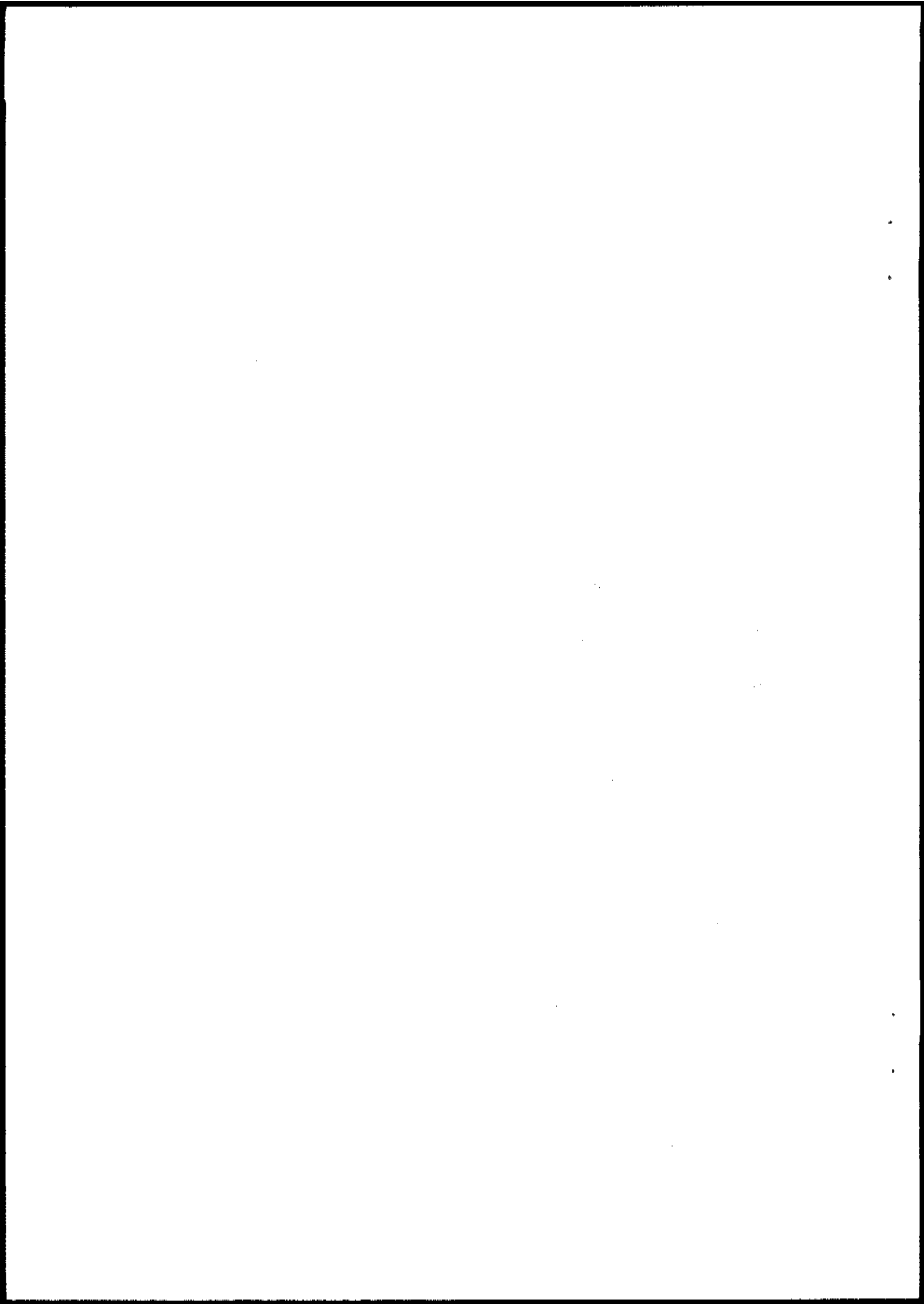
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## **Part I Introduction**

A joint WHO/World Bank meeting of partners in reproductive health focused on the role of financial and economic information in the design, implementation, management and evaluation of reproductive health strategies, programmes, projects and services in developing countries. The meeting provided an informal opportunity for partners in reproductive health to present and discuss current activities in this area in order to foster better co-ordination and collaboration in the future. The meeting, which took place at The World Bank on 19 November 1996, aimed to address specifically the following questions:

- How can financial and economic analysis of reproductive health programs help inform decision-makers?
- What are ways to increase the use of this type of information at the country-level?
- What issues require further research, analysis or methodological development?
- What are the technical and financial resources available to meet these needs?

The issues raised, deliberations and recommendations are summarised in Part II of this document, and the presentations made are abstracted in Part III. The meeting agenda, list of participants, slides from the presentations and inventory of related activities are found in the appendices.

## **Part II Summary of discussions and recommendations**

Following the individual presentations, the discussions raised, but not necessarily resolved, many issues in economic and financial evaluation of reproductive health programmes. The issues are listed below, grouped under major themes.

### **Effectiveness measurement issues**

- What measures of effectiveness can be used? When focusing on packages of services, outcomes are difficult to measure. It was suggested that the group define several common effectiveness measures that could be used in economic research, such as an indicator related to morbidity, process, and behavioral effects.
- Would it be meaningful to look at output measures (per person served, etc.) rather than outcome measures? Output measures might be easier to measure.
- Can "reproductive wellness" be used as an effectiveness measure? This was part of a recent study in Andhra Pradesh, India.
- One limitation of using Disability Adjusted Life Years (DALY) as an effectiveness measure is that the outcomes are solely health outcomes and not related to other human capital issues, such as loss of productivity. Effectiveness measures should ideally include measures of quality of life and increased productivity, which are difficult to measure.
- Cost effectiveness analysis should not only compare interventions. Analysis can also consider the cost-effectiveness of providing care at the various levels in the health system.

For example, would it be cost-effective to cluster management of complications, and concentrate investment, at the referral level?

- Are the reproductive health indicators that are currently under consideration by WHO, UNICEF and UNFPA appropriate for use as effectiveness measures in cost-effectiveness studies? Reproductive health cost effectiveness work should include input from this interagency working group.
- IPAS has experience in comparing cost-effectiveness of dilatation and curettage to manual vacuum aspiration that might be helpful in this discussion.
- MotherCare discussed results of validation studies for self-reported maternal complications (research trying to determine when is a "case" a case). Self-reporting of morbidities is problematic, and therefore not useful as an effectiveness measure. Research by MotherCare has found that national and community surveys cannot be used to determine prevalence of a specific maternal complication. Furthermore, complication rates vary by country, so that a standard rate of 15% does not really apply universally. A possible solution when doing research might be to review the medical records of a woman. Indicators of unmet need and case fatality rates also are constructed in this manner, so there is some precedent for relying on medical records.
- Is it possible for complication rates to be modeled or predicted based on more readily available determinants?
- Facility-based outcome measures are probably the best type of assessment of impact of interventions.
- Summary of outcome measures:
  - mortality  $\Rightarrow$  cannot measure,
  - morbidity  $\Rightarrow$  very difficult to get an accurate measurement,
  - complications  $\Rightarrow$  unreliable, and
  - quality of care and facility-based information  $\Rightarrow$  available.

#### **Common definition of reproductive health**

- A common definition of reproductive health is necessary for carrying out economic and financial evaluations. This might include: providing access and choice in family planning; caring for women before, during, and after pregnancy; preventing and controlling STDs, including HIV; preventing and treating cervical cancer; promoting the health of adolescents; and supporting positive health practices, such as reduction of FGM.
- Reproductive health is more than family planning.
- It is important to consider synergism of providing a fully integrated package of reproductive health services, as compared to providing each element independently.
- It would also be interesting to understand the synergism between different types of services, such as FP and ANC or FP and STD control.
- In practice, the package of reproductive health services varies by country, so it is difficult to standardize.

#### **Usefulness of cost estimation tools**

- What is the value of producing models for estimation of reproductive health costs (without any consideration of effectiveness)?
- Planners are sometimes too demanding on cost estimation tools; the limitations of these tools should be clearly described.

- It would be useful to consider the experience of the "Target Cost Model" (Futures Group) to learn about what worked, what did not work and what the models are being used for. Experience of WHO/EPI may also be relevant.
- Models can be useful for sensitivity testing of various care delivery strategies.
- The ultimate purpose of the tool -- for management of programs or comparisons among country programs -- will determine how a costing tool should be structured.

#### **Issues related costing and cost-effectiveness of reproductive health interventions**

- In many settings, cost estimation will not be useful without considering the private sector.
- In cost estimation it is important to include the cost of volunteer or unpaid labor and other non-financial costs.
- More information is needed on allocation of fixed costs among various interventions, since staff and other inputs are used for several interventions.
- It might be useful to estimate cost savings of rational/standard treatment.
- When examining cost-effectiveness of reproductive health, existing services must be taken into consideration; country-level implementors are not starting from "zero." The incremental cost of strengthening existing services is more meaningful than the total cost. Information is needed on what types of services should be added to pre-existing programs to complete the reproductive health package, what these services will cost, and how to phase in or combine these additional services.
- What is the counterfactual of not doing anything? What would be the implications in terms of costs and health outcomes of not intervening? This would result in infertility, deterioration of quality of life, chronic complications, productivity losses; low birth weight and other disease in infants.
- The cost effectiveness of preventive care should also be included. Can it be assumed that it is effective on the basis of studies carried out in industrialized countries?
- Health programs are often justified on the basis of whether or not they prevent death. However, but hospital studies are usually the basis of these justifications, and these facilities have higher costs. This might defeat the purpose of demonstrating that an intervention is cost-effective.

#### **Integration of reproductive health services in research**

- Are services truly integrated in models?
- In the planned and ongoing studies, what is the definition of reproductive health? Does it include services other than family planning and STD services?
- While it may seem intuitive that integration is more cost-effective than providing services vertically, there is very little research in this area. There are political costs to integrating services, and often vertical programs have a greater impact or effectiveness.

#### **Demand issues**

- Studies are needed on demand for services. Why are clients staying away? Is demand a function of quality of care?
- Pricing is a key issue -- impact on demand of both public and private sectors.
- Price elasticity of demand for maternity or essential care for obstetric complications (not just family planning).
- Income elasticity of demand for maternity or essential care for obstetric complications.
- Misuse or overuse of services will be evaluated in the ANC trial.
- Some services or interventions might be easier to promote than others.

- Need to look at rapid approaches to modeling demand, in place of lengthy research.
- Women's lack of control over household finances is a key issue that influences demand.

#### **Financing issues**

- Hospital services for reproductive health are a form of "catastrophic insurance."
- Discussion of an insurance pool for financing reproductive health activities: problem is that access to benefits of services depends upon a gatekeeper. Example of The Gambia given as a scheme where risk-pooling for pregnancy care worked and where the gatekeeper was a midwife. Other financing options for reproductive health need to be explored.
- Who is receiving public subsidies for health care? One cannot assume that it is the poorest.
- Assessment of affordability is important. A service can be cost-effective but not affordable to the government or to households.
- Sustainability of financing of programs is an important area of research.

#### **Use of qualitative analysis techniques**

- Qualitative analysis, such as audits and reviews of maternal deaths can be useful to compliment cost analysis, for example in identifying contributing factors (both economic and non-economic).
- Qualitative analysis may be useful to include economic variables into situation analyses of reproductive health programs and services.

#### **Priority areas for further research**

- Cost-effectiveness of interventions during adolescent years.
- Evaluation of affordability and sustainability of programs, as well as alternative financing mechanisms.
- Methodologies to measure time; approaches for joint cost allocation.
- Pricing of services and impact on the health system.
- Price elasticity of demand for reproductive health services.
- Income elasticity of demand for reproductive health services.
- Evaluations of the emerging role of the private sector with respect to reproductive health services.
- Cost and cost-effectiveness of safe abortion services compared to unsafe abortion.
- Development of rapid approaches to assessing demand, cost-effectiveness or costs.
- More research in African countries.
- Behavioral issues, such as provider incentives.
- Demand for services and intra-household allocation issues.
- Distributional analyses to evaluate the effectiveness of targeting interventions.
- Studies are needed on the demand for services (not utilization but statistically predicting determinants of demand).
- Studies which assess improving service efficiency (how to get more services out of the same or reduced budget).
- Studies on cost savings to hospitals or to the health system from reducing need for hospital services.

#### **Use of economic and financial information by decision-makers**

- How can the use of this information by decision makers be promoted?

- Are there lessons learned in child health and family planning that can be used in reproductive health? What information was useful and what information made a difference?
- It will be important to “demystify” the process of using economic and financial information for reproductive health programming.
- More work is needed to learn how to disseminate information about what is known to planners and decision makers who need the information.
- Current use of information is often related to *a priori* attitudes of decision makers; how can these be influenced with new information?
- It will be important to include decision makers in process of collecting and analyzing information, so that they “buy in” to results.
- Where possible, use of local linkages between economists and clinicians is important in making sure that information is used.
- Use of information is often related to how receptive managers are to data in general. How can this be influenced?
- A Minister of Finance may be a more important audience than the Minister of Health.

### **Part III Follow-up and next steps**

- E-mail address lists will be sent to all participants.
- A future meeting will focus on more technical issues, to be followed by another meeting including both economists and policy makers.
- All future meetings should include more developing country representation and representatives from outside of the Americas.
- It was recommended to include economist(s) in future meetings on indicators and evaluation of reproductive health.
- The possibility of creating an Internet discussion list for the group will be explored. (The World Bank plans to have a “listserv” service running soon.).
- It was decided to create a matrix of ongoing and completed country studies and objectives.



## **Appendix A Agenda**

World Health Organization  
Division of Reproductive Health  
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The World Bank  
Human Development Department, Health and Education

Informal Meeting on  
The Role of Financial and Economic Analysis on  
Reproductive Health Project/Programme Development

Tuesday, 19 November 1996  
Washington, DC

### **Agenda**

8:30 a.m.	Morning coffee/tea	
9:00 a.m.	Welcome, introductions	Anne Tinker (World Bank) Susan Holck (WHO)
9:15 a.m.	Presentation of activities in economics and financing of reproductive health programmes	Moderated by Craig Lissner (WHO)
10:30 a.m.	Coffee/tea break	
10:45 a.m.	Presentation of activities in economics and financing of reproductive health programmes (continued)	Moderated by Craig Lissner (WHO)
11:15 a.m.	Open discussion	Moderated by Craig Lissner (WHO)
12:30 p.m.	Luncheon	
2:00 p.m.	Brainstorming session on role of economic and financial analysis of reproductive health programmes	Moderated by Logan Brenzel (World Bank)
3:30 p.m.	Coffee/tea break	
4:00 p.m.	Recommendations and future activities	Moderated by Logan Brenzel (World Bank)
5:00 p.m.	Closing remarks	Susan Holck (WHO) Anne Tinker (World Bank)



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**Safe Motherhood Demonstration Project (SMDP)**

**Summary:** The objective of the SMDP is to evaluate the relative cost-effectiveness of various interventions for reducing maternal morbidity and mortality in three study sites in Ghana, Ecuador, and Vietnam. The epidemiological aspects of the demonstration project are being conducted by The Population Council through a grant administered by The World Bank and funded by CIDA. In addition, the World Bank is designing and implementing the cost-effectiveness analyses in each country.

In Ecuador, the exercise will evaluate the cost-effectiveness of a program to introduce a second medical opinion before C-section is performed in the Maternidad Isidro Aroya hospital in Quito. In Ghana, the work will focus on evaluating the cost-effectiveness of training midwives in Life Savings Skills in two districts (Techiman and Kintampo) in the Brong-Ahafo region. The analysis will evaluate both public and private settings. In Vietnam, the cost-effectiveness exercise will focus on evaluating whether training of physicians in C-Section procedures, and training of midwives and other auxiliary health professionals in Life Saving Skills and provision of necessary equipment and supplies is more cost-effective at the hospital level, or at both hospital and commune levels simultaneously.

The SMDP is a 3.5-year project which began in February 1994 and will be completed by August 1997. The cost-effectiveness exercises will be designed and implemented between November 1996 and May 1997.

**Developing countries involved:** Ecuador, Ghana

**Status:** ongoing activity

**Authors/Investigators/Implementors:** The studies are being conducted by The Population Council and The World Bank in collaboration with government and local professionals.

**Documents/Publications:** not available at this time.

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### **World Bank Framework for Economic Analysis of Population and Reproductive Health Services and Activities**

**Summary:** This framework is being developed as part of a wider World Bank effort in improving the quality of economic analysis of Health, Nutrition, and Population Projects. A recent review of 40 HNP projects found that the economic analysis of population and reproductive health projects needed strengthening.

The framework will include a section on how to 1) identify alternative interventions for Pop/RH operations; 2) link alternative interventions to the County Assistance Strategy, Country Economic Memorandum, and Economic and Sector Work, 3) estimate demand for services; 4) assess the fiscal impact of proposed Pop/RH interventions; 5) evaluate the costs, cost-effectiveness, cost-benefit, rate of return and net present value of investing in the proposed Pop/RH intervention; 6) conduct sensitivity and risk analysis of alternative interventions; and, 7) interpret economic and financial information for selecting the best Pop/RH alternative. The audience for the framework will be World Bank staff and task managers working on population and reproductive health operations.

The document is being developed within the Human Development Department of the World Bank, but will include field tests in one or more country. Field sites are yet to be determined.

**Status:** ongoing activity. Drafts of two-three sections to be completed by January 1997.

**Authors/Investigators/Implementors:** The work is being conducted by a World Bank health economist.

**Documents/Publications:** an updated outline of the framework is available in English.

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**World Bank Work in Cost-effectiveness Analysis of Reproductive Health Strategies and Services**

**Summary:** The *World Development Report, Investing in Health* (1993) reviews the cost-effectiveness of interventions against infectious and communicable diseases, non-communicable diseases, and injuries, in order to ascertain priority services which should be included in an essential package of health care services provided and financed by governments. Many aspects of reproductive health are included in the essential package, including tetanus toxoid immunization, interventions controlling micronutrient deficiencies, interventions addressing maternal and perinatal conditions, and prevention of STD/HIV infection.

**Developing countries involved:** Data collection and analysis was conducted worldwide.

**Status:** Completed activity.

**Documents/publications:**

The World Bank, *World Development Report, Investing in Health*, Washington, D.C., 1993.

Tinker, A., and Koblinsky, M., eds., *Making Motherhood Safe*, World Bank Discussion Paper No. 202, The World Bank, Washington, D.C., 1993.

The World Bank, *A New Agenda for Women's Health and Nutrition, Development in Practice*, The World Bank, Washington, D.C., 1994.

Jamison, D., Mosely, WH, Meashem, AR, and Bobadilla, JL, eds., *Disease Control Priorities in Developing Countries*, Oxford University Press, London, 1994.

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### **WHO Mother-Baby Package Reproductive Health Costing Spreadsheet**

**Summary:** Information on the cost of implementing the Mother-Baby Package is critical for national and district-level safe motherhood programme planners. This information is useful:

- to assist in the definition of essential packages or clusters of interventions, based in the Mother-Baby Package, that are appropriate to the local setting and respond to local needs;
- to support the development of operationally feasible and sustainable plans for implementing the local packages of interventions;
- to compare the cost of the Mother-Baby Package interventions with other locally-defined clusters of interventions;
- to assist in the development of plans for financing the Mother-Baby Package interventions; and
- to help to deploy rationally and efficiently health personnel, equipment and other inputs required to implement the package.

The WHO Division of Reproductive Health is developing a spreadsheet to assist in estimating the cost of implementing Mother-Baby Package at the district level. The model includes a standard set of assumptions representing a hypothetical rural district population. For a rough estimation of cost, based on "standard" treatment, the base inputs can be used with minimal modification. For a more rigorous analysis that better reflects the specific local situation, the inputs can be more critically examined and modified. The model estimates total cost, per capita cost, and per-birth cost for the district. These estimates are further broken down by input (drugs, vaccines, salaries, infrastructure, etc.), by intervention (haemorrhage, eclampsia, sepsis management etc.), and by service location (hospital, health centre, health post).

The spreadsheet and guidelines for its application are designed for use by a local statistician or economist, with minimal external support. The spreadsheet might also be of interest to potential programme donors or other interested parties.

**Status:** available in draft, to be field tested in 1997 and finalized and distributed in late 1997 or early 1998.

**Authors/Investigators/Implementors:** Jose Luis Bobadilla, Peter Cowley, Craig Lissner and David Wallinga.

**Documents/Publications:**

World Health Organization, *Mother-Baby Package Reproductive Health Costing Spreadsheet*. WHO, Geneva, 1997 (in draft)

World Health Organization, *Mother-Baby Package: Implementing safe motherhood in countries*, WHO, Geneva 1994 (document number WHO.FHE/MSM/94.11)

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***Delivering cost-effective antenatal care in developing countries: What is known and what needs to be done?***

**Summary:** Twelve economic studies were located from developing countries, that related the costs of specific interventions during pregnancy to specific outcomes associated with those interventions. These studies themselves were generally of poor quality (as judged by economic evaluation standards), and are of little use to policy makers. Suggestions are made for improving the content of these studies for future authors.

**Developing countries involved:** all

**Status:** Completed activity

**Authors/Investigators/Implementors:** Guy Hutton, Miranda Mugford, and Julia Fox-Rushby. Funded by the UK government (ODA)

**Documents/Publications:** currently being written, in English

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***A rational package for antenatal care: economic evaluation alongside the WHO multi-centre randomized controlled trial.***

**Summary:** A new 'evidence based' package of routine antenatal care is being compared with current practice in a randomized controlled trial coordinated by the WHO, with individual clinics as the basis of cluster randomization. We are collaborating with the trial investigators and other researchers to assess cost-effectiveness of the new package of antenatal care in publicly-funded centres in Argentina, Cuba, Saudi Arabia, South Africa and Thailand. The primary outcome measures of effectiveness are an index of maternal morbidity and the proportion of low birth weight babies. The economic evaluation will include short term health care costs of antenatal and subsequent obstetric and delivery care, and costs of access to antenatal care for women attending. Cost measurement will be based on trial data about quantities of resources used, and on unit costs of resources based on a combination of routinely available and interview data from health administrators and women in each centre. The analysis will compare the effectiveness results from the trial with cost differences observed in each country, and document similarities and differences in the cost of care in different health care facilities within and between countries. Implications for costs of antenatal care in settings with less developed health systems will also be assessed. Cost data collected in this research will inform future analyses of cost-effectiveness of antenatal interventions in both study settings and other settings.

**Countries involved:** South Africa, Thailand, Cuba, Argentina, Saudi Arabia

**Status:** planned full study, awaiting response to grant application

**Authors/Investigators/Implementors:**

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**Documents/Publications:** currently available in draft for limited circulation, in English

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**Costs, effects and cost effectiveness analysis of a mobile maternal health care service in West Kiang, The Gambia.**

**Summary:** The costs, effects and cost-effectiveness of a new mobile maternal care service offered in The Gambia at a government-run health centre in Karantaba were compared with the usual pattern of maternal care offered (at Ngayen Sanjal). Routinely collected data were supplemented by research on time allocation of staff by activity, use of drugs, medical consumables and vehicles, out-of-pocket payments by patients and a range of effectiveness indicators. To account for a differential effect on hospital referrals, maternity care at the main referral hospital was assessed. In 1991, the annual total cost of maternity care at Karantaba was US\$64,800 compared with US\$25,300 at Ngayen Sanjal. The largest proportion of this difference was attributed to training. Whilst average cost/attendance was higher at Karantaba, the marginal cost of expanding the service to other villages was lower than the marginal cost at Ngayen Sanjal. Incremental cost-effectiveness of the mobile service at Karantaba was calculated according to best and worst case scenarios which showed that the extra cost/extra death averted per year ranged between US\$459 and US\$213.4. Using discounted life years gained reduced the figures to US\$42.9 and US\$206.3. Various suggestions are offered for reducing the cost of the new service, and a number of methodological points are raised for discussion.

**Developing countries involved:** The Gambia

**Current status:** completed.

**Authors/Investigators/Implementors:** Dr Julia Fox-Rushby, LSHTM, with Sr F Foord MRC Dunn Nutrition Unit, Keneba, The Gambia.

**Documents/publications:**

Fox-Rushby JA, Foord F (1996)

"Costs, Effects and Cost-Effectiveness Analysis of a Mobile Maternal Health Care Service in West Kiang, The Gambia" *Health Policy* 35, 2, 123-143.

Fox-Rushby JA (1995)

"Cost and Effects of a Mobile Maternal Health Care Service, West Kiang, The Gambia" *World Health Statistics Quarterly*, 48, 1, 23-27.

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***Joint Partnerships for Health Reform (PHR) and MotherCare Initiative in costs and cost effectiveness of maternal and reproductive health services.***

**Summary:** The general objectives of the initiative are to:

- determine the additional costs and added effectiveness of MotherCare interventions in several countries (Bolivia, Indonesia, and perhaps India and Egypt),
- estimate the total costs of maternal health services in MotherCare intervention areas
- determine the investment costs associated with MotherCare interventions for improving maternal health services
- assess the financial sustainability of maternal health service delivery models in each of the countries.
- validate the WHO Mother-Baby package costing spreadsheet (in Bolivia only at this time)

**Developing countries involved:**

Two countries (Bolivia and Indonesia) have agreed to participate in the initiative and negotiations with two others (India and Egypt) are proceeding.

**Status:** Ongoing activity in Bolivia, planned in other countries.

**Authors/Investigators/Implementors:** PHR and MotherCare in collaboration with MOHs. Local consultants (economist) will assist in Bolivia and Indonesia.

**Documents/publications:** will be available in English and Spanish (for Bolivia).

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## **Pharmaceutical Costs Of Reproductive Health Services**

**Summary:** This activity seeks to quantify the pharmaceutical cost implications of reproductive health services in developing countries. It consists of three phases of work, of which the first is almost complete, with planning for the other two underway: **Phase One:** Define an appropriate set of reproductive health problems (34); identify the types and quantities of drugs and expendable medical supplies required; and estimate the costs of treating one episode of each problem. **Phase Two:** Use published data to make a global estimate of pharmaceutical and medical supply costs for reproductive health services, using the problems and products developed in phase one. **Phase Three:** Conduct one or more country studies to determine actual costs at the country level, based on local demographic, epidemiological, drug availability and drug cost data. Efforts will be made to develop this information within the context of local public and private sector health services delivery systems.

**Developing countries involved:** This has not been precisely determined. For the second phase of work, this will depend on the countries for which suitable published data may be available. For the third phase, Ecuador, Indonesia and the Philippines have been considered as possible sites for country studies.

**Status:** Ongoing activity.

**Authors/Investigators/Implementors:** As noted above, the primary implementors are the USAID Rational Pharmaceutical Management Project and the MotherCare II Project. The Health Policy and Sector Reform Division of the USAID Global Bureau's Office of Health and Nutrition is sponsoring an activity whose objective is to quantify the pharmaceutical costs of providing defined programs of reproductive health services. Two Washington based USAID projects are the implementors. One is the Rational Pharmaceutical Management Project and the other is the MotherCare II Project. Contact information for each of these principals is given below:

### **USAID**

#### **Health Policy and Sector Reform Division**

Contact Persons: Anthony Boni  
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### **USAID**

#### **Nutrition and Maternal Health Division**

Mary Ellen Stanton  
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### **Rational Pharmaceutical Management Project**

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### **MotherCare II Project**

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+(1 703) 528-7480  
jmcdermott@jsi.com

### **Documents/Publications:**

"Estimating the Costs of Reproductive Health Commodities: Rational and Description of Activities"  
"Pharmaceutical Products and Medical Supplies Price List for Selected Reproductive Health Problems"

### **Contact:**

Mr. Anthony Boni, Health Policy and Sector Reform Division, USAID.  
Telephone: +(1 703) 875-4522; Fax: +(1 703) 875-4633; E-mail: aboni@usaid.gov

### ***Expenditures and Sources for the Family Planning Program in Bangladesh***

**Summary:** The objective of this sub-project was to: 1) determine the sources and amount of funding for family planning activities in Bangladesh, and 2) determine how funds are utilized for the family planning program. Research showed that funding for family planning had grown considerably over the period 1987-1991. Donor funding and greater spending on the part of the government of Bangladesh have contributed to this increase. Because donor funding has grown more rapidly than has the government contribution, the government's share of funding has decreased.

**Developing countries involved:** Bangladesh

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International.

#### **Documents/Publications:**

"Expenditures and Funding of Population Programs in Bangladesh" is available for wide distribution from Family Health International. (English)

#### **Contact**

Barbara Janowitz, Service Delivery Research, Family Health International, PO Box 13590,  
Research Triangle Park, North Carolina 27709 USA  
Telephone: +(1 919) 544-7040; Fax +(1 919) 544-7261; E-Mail [bjanowitz@fhi.org](mailto:bjanowitz@fhi.org)

***Cost of Methods and Delivery Systems (for Contraceptive Methods)***

**Summary:** This study estimated the cost of services for combinations of delivery systems and contraceptive methods in Bangladesh. The study covered government and non-government programs, including some innovative programs from both sectors. Results for methods provided at clinics show that workers have unallocated time and that little time is spent delivering family planning services. Costs per visit could be reduced if client load increased. In addition, costs per CYP could be reduced if field workers made fewer visits to users of clinic methods and if they took on new activities.

**Developing countries involved:** Bangladesh

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International, along with the Population Development and Evaluation Unit (PDEU), IME-Division of the Ministry of Planning, Government of the People's Republic of Bangladesh and Associates for Community and Population Research (ACPR).

**Documents/Publications:**

"Productivity and Costs for Family Planning Service Delivery in Bangladesh: The Government Program" (English)

"Productivity and Costs for Family Planning Service Delivery in Bangladesh: The NGO Program." (English)

**Contact:**

Barbara Janowitz, Service Delivery Research, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA  
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***The Impact of Adding the contraceptive Implant to Methods Offered by the National Family Planning Program***

**Summary:** The main purpose of this study was to determine the impact on contraceptive use of adding Norplant to the method mix in Thailand, and to compare the costs of expanding contraceptive use through provision of different methods. Results indicated that the costs of adding Norplant to the service delivery mix were far higher than that of expanding provision of the IUD or of injectables considering time horizons varying from 1 to 5 years.

**Developing countries involved:** Thailand

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International with the Thailand Fertility Research Association (TFRA).

**Documents/Publications:**

B Janowitz, K Kanchanasinith, N Auamkul, P Amornwichee, K Soonthomodhada and R Hanenberg. 1994. Introducing the Contraceptive Implant in Thailand: Impact on Method Use and Costs. *International Family Planning Perspectives*. 20: 131-36. (English)

**Contact:**

Barbara Janowitz, Service Delivery Research, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA  
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**Economic Analysis of ASHONPLAFA Programs**

**Summary:** ASHONPLAFA, the Honduran IPPF affiliate, and USAID were interested in conducting this study to provide ASHONPLAFA with information to control costs and to establish a fee structure. The cost study showed that client utilization of ASHONPLAFA's smaller clinics was very low, resulting in much higher average costs for clinic services. Female sterilization was found to be the least costly method, while the costliest method was condoms distributed through the CBD program. Cost recovery was highest in the Social Marketing Program, and lowest in the clinics; cost recovery for female sterilization was especially low, with clients paying only US\$0.75 per CYP. Recommendations were made to ASHONPLAFA senior management and focused on ways to improve cost recovery, to increase utilization of smaller clinics, and to track costs more effectively.

**Developing countries involved:** Honduras

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International

**Documents/Publications:**

A final report "Costs of Family Planning Services Delivered Through ASHONPLAFA Programs" is available for wide distribution. English

**Contact:**

John Bratt, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA  
Telephone: +(1 919) 544-7040; Fax +(1 919) 544-7261; E-Mail [jbratt@fhi.org](mailto:jbratt@fhi.org)

### **Operations Research to Improve the Sustainability of an Ecuadorian Family Planning Program**

**Summary:** This study used operations research to model the costs and effectiveness of IUD revisit norms. A signal detection paradigm was used to study the effect of three revisit norms on costs and detection of problems: 1) the current norm of four required revisits in the first year following insertion; 2) an norm of one required revisit with other revisits optional; and 3) an all revisits optional norm. The current four-revisit norm detects an estimated 75% of IUD-related problems. However, most clients with medical problems or side-effects reported that they would have returned without a routine appointment. Therefore, reducing required revisits from four to one would capture only nine percent fewer problems (or 55 per 10,000 insertions), but reduce overall revisits by 36%. Making all revisits optional would capture 53% fewer problems and reduce overall revisits by 64%. Detection of expulsion and suspected pregnancy would be most affected by changing the norm and detection of PID least affected. CEMOPLAF decided to adopt a new norm of one required visit.

**Developing countries involved:** Ecuador

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International and the Population Council carried out the work, with the Centro Medico de Planificacion Familiar (CEMOPLAF) of Quito, Ecuador.

**Documents/Publications:** A final report is available for wide distribution (English)

**Contact:**

James Foreit, The Population Council, 4201 Connecticut Ave. NW Suite 408, Washington DC 20008-11568  
Telephone: +(1 202) 237-6455; Fax: +(1 202) 237-6458; E-mail: JFOREIT@PCDC.org

### ***Programmatic Evaluation of Norplant Implant Introduction***

**Summary:** The objective of this study was to evaluate programmatic and clinic outcomes associated with the introduction of Norplant in five family planning clinics in Bamako, Mali. Outcomes examined include the factors that influence a woman's decision to accept Norplant, experience with side effects, requests for removal and client satisfaction. In addition, the quality of counseling, program costs and the impact of Norplant introduction on contraceptive use was evaluated. Results indicated that, overall survey respondents were very satisfied with Norplant; women felt that Norplant is easy to use and provides long-term protection. The most disliked aspect of Norplant was side effects, especially menstrual disturbances. Service delivery was generally good but some deficiencies in counseling, particularly concerning pills and IUDs, were noted. In the short-term, the cost of providing Norplant per couple year of protection (CYP) is much higher than other methods, but costs per CYP decrease dramatically over a five-year period. These results will be used to improve the Norplant program and assist in developing the expansion phase.

**Developing countries involved:** Mali

**Status:** Completed

**Authors/Investigators/Implementors:**

Family Health International and the Division Santé Familiale et Communautaire (DSFC) of the Ministère de la Santé, Solidarité et les Personnes Agées (MSSPA) carried out the work.

**Documents/Publications:**

A final report "Programmatic Evaluation of the Introduction of Norplant" is available for wide distribution. (English and French)

**Contact:** Karen Katz, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA

### **Comparison of Methodologies for Measuring Staff Time Used to Provide Reproductive Health Services**

**Summary:** The objective of this study is to compare the results obtained from an observational time-motion study with results from three alternative methodologies for measuring staff time, including Patient Flow Analysis (PFA), self-administered time sheets, and structured interviews with key staff. Observational time-motion studies are thought to produce the most accurate and complete data, but this assumption has not been tested. Information on the relative precision and cost of the principal approaches for measuring staff time would be useful for future cost studies, and also to guide decisions about adding a cost component to the Situation Analysis methodology.

**Developing countries involved:** Ecuador

**Status:** Ongoing

**Authors/Investigators/Implementors:** Family Health International and CEMOPLAF, an Ecuadorian NGO, are carrying out the work.

**Documents/Publications:** none

**Contact:**

John Bratt, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA  
Telephone: +(1 919) 544-7040; Fax +(1 919) 544-7261; E-Mail [jbratt@fhi.org](mailto:jbratt@fhi.org)

**Method Specific Costs of Family Planning**

**Summary:** This study estimates the method-specific costs of providing family planning services through different delivery models within Mexico's Ministry of Health. Observational studies are used to record the amount of time providers spend with clients and the type of services provided. Combined with data on salaries and benefits of employees, infrastructure and material costs, and services statistics, the total costs of different types of visits will be estimated. Particular emphasis will be on the IUD, since this is the most common form of reversible contraception in Mexico. This study includes clinic-based and rural outreach services. The study will help the Ministry of Health evaluate existing services and determine the contraceptive methods and ways of delivering services that are most economical. The results will enable administrators to make better decisions regarding future direction of the national family planning program and ultimately improve the allocation of scarce resources.

**Developing countries involved:** Mexico

**Status:** Ongoing

**Authors/Investigators/Implementors:** Family Health International, the Ministry of Health, and Pathfinder/Mexico are carrying out the work.

**Documents/Publications:** none

**Contact:**

David Hubacher, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA

### **Calculating Direct Costs of Family Planning Services**

**Summary:** The objective of this study is to calculate direct costs per service provided through Asociacion Demografica Salvadorena (ADS) clinics and the ADS rural outreach program. USAID/EI Salvador is in the process of changing the mechanism used to provide financial support to ADS. Beginning in 1997, the Mission will replace the current system of program grants with an agreement to reimburse ADS for specific service provided. In order to negotiate these reimbursement amounts, ADS needs to know current costs of producing services. Family Health International will provide technical assistance in the use of methodologies to identify costs of all resources used to produce services, and to allocate these costs to visits.

**Developing countries involved:** El Salvador

**Status:** Ongoing

**Authors/Investigators/Implementors:** F HI and the Asociacion Demografica Salvadorena (ADS) are carrying out the work.

**Documents/Publications:** none

**Contact:**

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### **Technical Assistance in Sustainability**

**Summary:** The objective of this project is to provide training and technical assistance to CEMOPLAF in the area of cost containment, cost recovery and income generation. CEMOPLAF is interested in strengthening its ability to conduct programmatic research, and the Population Council's INOPAL II project and Family Health International have provided technical assistance to CEMOPLAF staff through short courses in research and costing methodology, and also through a series of sustainability-related research studies. CEMOPLAF senior managers are committed to the idea of using information and research to inform decision making. They also have successfully built programmatic research capability within the organization, so that they are less dependent on external technical assistance. CEMOPLAF staff have carried out four studies examining a range of issues including client ability to pay, feasibility of offering ultrasound services, costs of laboratory services, and options for improving the functioning of clinic-based pharmacies.

**Developing countries involved:** Ecuador

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International, the Population Council's INOPAL II project, and CEMOPLAF carried out the work.

**Documents/Publications:** Final reports for two research studies are available (English and Spanish).

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### **Evaluation of Ability to Pay for Contraceptive Methods**

**Summary:** The Division Santé Familiale et Communautaire (DSFC) decided to explore the possibility of establishing prices for contraceptive methods. The main motive is to get people used to the concept of paying for a service which historically has been free. Therefore, they would like to establish a user fee system with the aim of nominal cost recovery. The analysis used clients' assets and discretionary spending to evaluate economic status since income information was generally unavailable. Results indicated variability among clinics in different regions exists which indicates that a two or three tiered price structure should be considered. The majority of clients have at least some money which could be used to purchase contraceptives, but within each clinic there are poor clients and measures to identify these clients should be developed so that they can be exempt from paying fees. The results will be used by the Ministère de la Santé, Solidarité et les Personnes Agées (MSSPA) to experiment with setting prices for Norplant, IUDs and injectables.

**Developing countries involved:** Mali

**Status:** Completed

**Authors/Investigators/Implementors:** Family Health International and the DSFC carried out the work.

**Documents/Publications:**

"An Assessment of Client 'Ability to Pay' for Contraceptive Methods at Malian Family Planning Clinics" is available for wide distribution. (English and French)

**Contact:**

Karen Katz, Family Health International, PO Box 13590, Research Triangle Park, North Carolina 27709 USA



## **Appendix C Presentations made by meeting participants**

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# *Economic and Financial Activities in Reproductive Health*

under  
**The POLICY Project / USAID**

*The Futures Group International*

## *The POLICY Project*



- Purpose:
  - Create supportive policy environments for family planning and reproductive health programs
- Elements
  - Policy dialogue and formulation
  - Participatory policy process
  - Strategic planning and resource allocation
  - Policy relevant research

## Strategic Planning and Resource Allocation



- Resource Allocation:
  - Promote sustainability, efficient use of resources, cost-effective interventions and private sector involvement
  - RH policies analyzed at service delivery, sectoral and national level:
- Strategic planning: organizing resources to meet needs

## Current Project Countries



<u>LAC</u>	<u>AFRICA</u>	<u>ANE</u>	<u>Europe / NIS</u>
Bolivia	Benin	Bangladesh	Romania
Ecuador	Ethiopia	Egypt	Turkey
Guatemala	Ghana	India	Ukraine
Haiti	Kenya	Indonesia	
Jamaica	Madagascar	Jordan	
Peru	Mali	Nepal	
	Morocco	Philippines	
	Mozambique		
	Sahel (CERPOD)		
	Senegal		
	Tanzania		
	Zambia		
	Zimbabwe		

## *Framework for Resource Allocation under POLICY*



### EFFICIENCY:

(doing more with less/same)

Cost of services	Honduras
Expanding services/access	Honduras
Targeting of subsidies	Egypt
Expenditure studies	Jordan*/Peru*
Cost effectiveness	Bangladesh

### SUSTAINABILITY:

(generating / extending resources)

Cost recovery / quality	Ecuador*, Ghana*, (Pakistan*)
Private sector	Jamaica, Global*
Market segmentation	Global*
Financing RH services	Global*, Morocco, Swaziland

### RH AS AN INVESTMENT

(economic rationales for RH)

RH and Human Capital	Global*
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## *Issues WHO Wants Addressed*

- Major findings?
- Linkages with planners?
- Usefulness for planning?
- "Gaps" in information encountered?
- Resources required?

## *POLICY Priorities*

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### ■ **Cairo + Donors + Country = economics**

- Cost of RH services
  - interventions, modes of delivery
  - leads to cost-effectiveness
- Sustainability:
  - cost recovery, role of quality
  - private sector, market segmentation

### ■ **Cairo + uncertainty = Returns to RH**



Partnerships  
for Health  
Reform

## Maternal Health Costs and Cost- Effectiveness Studies

*PHR & MotherCare*

The Role of Financial and Economic Analysis on  
Reproductive Health Project/Programme Development,  
WHO/World Bank, Washington, DC, Nov. 19, 1996

## Maternal Health Costs and Cost- Effectiveness

*PHR/MotherCare*



### ▲ Objectives

- ▲ determine consumer expenditures for maternal health services
- ▲ estimate total and selected unit costs of maternal health services
- ▲ validate WHO Mother-Baby Package costing spreadsheet

## Maternal Health Costs and Cost- Effectiveness

*PHR/MotherCare*

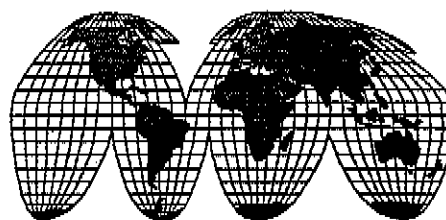


### ▲ Objectives

- △ determine investment costs associated with MotherCare interventions
- △ determine additional costs and added effectiveness of MotherCare interventions
- △ assess financial sustainability of maternal health service delivery models

## Maternal Health Costs and Cost- Effectiveness

*PHR/MotherCare*



### ▲ Participating Countries

- △ Bolivia
- △ Indonesia (under discussion)
- △ India (under discussion)
- △ Egypt (under discussion)

**Bolivia***PHR/MotherCare***▲ Results**

- △ *Baseline - June-Sept 96*
- △ *Consumer/household costs - March 97*
- △ *Service costs - Dec 97*
- △ *Mother-Baby costing spreadsheet - March 97*
- △ *CEA - Dec 98*

**Bolivia***PHR/MotherCare***▲ Linkages**

- △ *MOH*
- △ *hospitals*
- △ *municipalities*

**▲ Use of results**

- △ *refinement of reimbursement costs for maternal/infant services (July 96 maternal-child health insurance law)*

## Indonesia



*PHR/MotherCare*

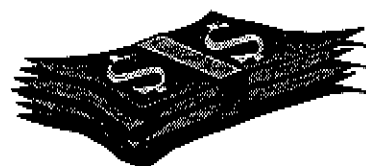


### ▲ Results

- △ costs and CE of maintaining maternal health improvements in South Kalimantan and national implications
- △ longer run viability of village midwives (bidan di desa)

## Maternal Health Costs and Cost-Effectiveness

*PHR/MotherCare*



### ▲ Resources

- △ human
- △ financial
- △ PHR
- △ MotherCare

**FAMILY HEALTH  
INTERNATIONAL  
RESEARCH ON ECONOMICS OF  
REPRODUCTIVE HEALTH**

John H. Bratt  
November 19, 1996

**FAMILY HEALTH INTERNATIONAL  
(FHI)**

- Contraceptive Development
- Family Planning
- Reproductive Health
- HIV/AIDS Prevention

## Country-Level Studies of Expenditures on Family Planning

- Coordination with Evaluation Project
- Purpose: To Track Expenditures by Source of Funds and by Category of Expenditure
- Studies Conducted in Bangladesh, Ecuador and Ghana

## Research on Costs

### ① Costs of Family Planning Methods/Delivery Systems

- What is the cost per unit of output of contraception provided through various delivery mechanisms?
- Studies Conducted or Underway in:
  - Dominican Republic
  - Honduras
  - Ghana
  - Bangladesh
  - Egypt
  - Mexico
  - El Salvador

## Research on Costs (Cont.)

### ② Cost/Impact of Adding New FP Method or Delivery Mechanism

- What is the incremental cost and incremental output associated with adding a new method or delivery system?
- Studies Conducted or Underway in:
  - Thailand (Norplant)
  - Mali (Norplant)
  - Ecuador (DMPA)
  - Bolivia (DMPA)
  - Kenya (Post-Partum IUD Provision)

## Research on Costs (Cont.)

### ③ Monographs on Methods/Strategies

- Methods for Costing FP Services (UNFPA, 1994)
- Position Paper on Costs and Financing in the Africa Region (in progress)

## Research on Sustainability

- Cost Containment
- Income Generation/Cost Recovery
  - Ability to Pay for FP/RH Services - Ecuador, Honduras, Mali, Egypt, Bangladesh
  - Impact of Price Increases on Demand and on Client Profile - Honduras, Mali, Ecuador
  - Feasibility Studies of New Services to Generate Profits - Ecuador, Honduras
  - Position Paper on Options for Financing Family Planning (UNFPA, 1994)

## Research to Improve Methods of Economic Analysis in Reproductive Health

- Comparison of Four Methods For Measuring Staff Time
- Evaluation of Experimental and Non-Experimental Approaches For Estimating Price Elasticity of Demand for RH Services

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## WORLD BANK ACTIVITIES IN ECONOMICS AND FINANCING OF REPRODUCTIVE HEALTH

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### Recent World Bank Lending

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- FY 1996: \$600 million for population and reproductive health activities in 15 countries
- 30% increase from FY 1995
- EAP = 34%    LAC= 19%    ECA=19%  
SA = 14%    AFR=8%    MENA=6%
- Integration, private sector, NGOs, SIPs

## Quantitative & Economic Analysis

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- 1993 World Development Report
- 1993 Making Motherhood Safe
- 1994 Disease Control Priorities in  
Developing Countries
- 1994 A New Agenda for Women's  
Health and Nutrition

## Findings

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- Maternal and perinatal causes  
represent a large share of the Burden of  
Disease
- Many reproductive health interventions  
are cost-effective: essential package +  
clinical services = \$12 - \$30/capita
- Emphasis on integration of preventive  
and clinical services
- Need more country-specific information

## Safe Motherhood Demonstration Project

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- 3.5 year project (February 1994 to August 1997)
- CIDA Financing, Population Council
- Objective: to evaluate the relative cost-effectiveness of interventions for reducing maternal morbidity and mortality in Ghana, Ecuador, Viet Nam

## Ecuador Cost Component

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- Focus: net cost savings of introduction of a second medical opinion for Cesarean section in the Maternidad Isidro Ayora Hospital, Quito
- Combined analysis of secondary (expenditures) and primary (patient) data
- January - April 1997

## Viet Nam Cost Component

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- Focus: comparative cost-effectiveness of upgrading the district hospital or commune and district levels in two provinces (Bac Thai and Lam Dong)
- Training of midwives and physicians; provision of essential equipment, supplies, and medications
- Facility survey & patient information
- January - March 1997

## Ghana

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- Cost-effectiveness of training midwives in Life Saving Skills in two districts
- Methodology under development
- May relate cost study to event audit?

## Framework for Economic Analysis

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- Audience: Bank staff and task managers
- Objective: to improve the quality of economic analysis for project design
- Approach: guidelines for macro- and micro-analysis
- Available Spring 1997

## Framework Content

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- Identification of project alternatives (including public and private sector)
- Link interventions to macro sectors
- Assess fiscal impact (household, health sector, economy)
- CEA/CBA/CUA
- Sensitivity and risk analysis
- Overall coherence

## Country Examples

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- Burden of Disease: 25-30 countries
- Estimation of NPV, IRR: Egypt, Indonesia
- Financing of RH: India
- Cost-effectiveness: Pakistan

## Role of Economic Analysis

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- What are priority issues which need to be further addressed?
- What are our gaps in knowledge?
- What methodologies need further development?
- How are results being used by policy makers, donors? What can be done to enhance this use?

## **ESTIMATING THE PHARMACEUTICAL COSTS OF REPRODUCTIVE HEALTH SERVICES**

### **Sponsor**

**Health Policy and Sector Reform Division,  
USAID Global Center for Population and Health**

### **Implementors**

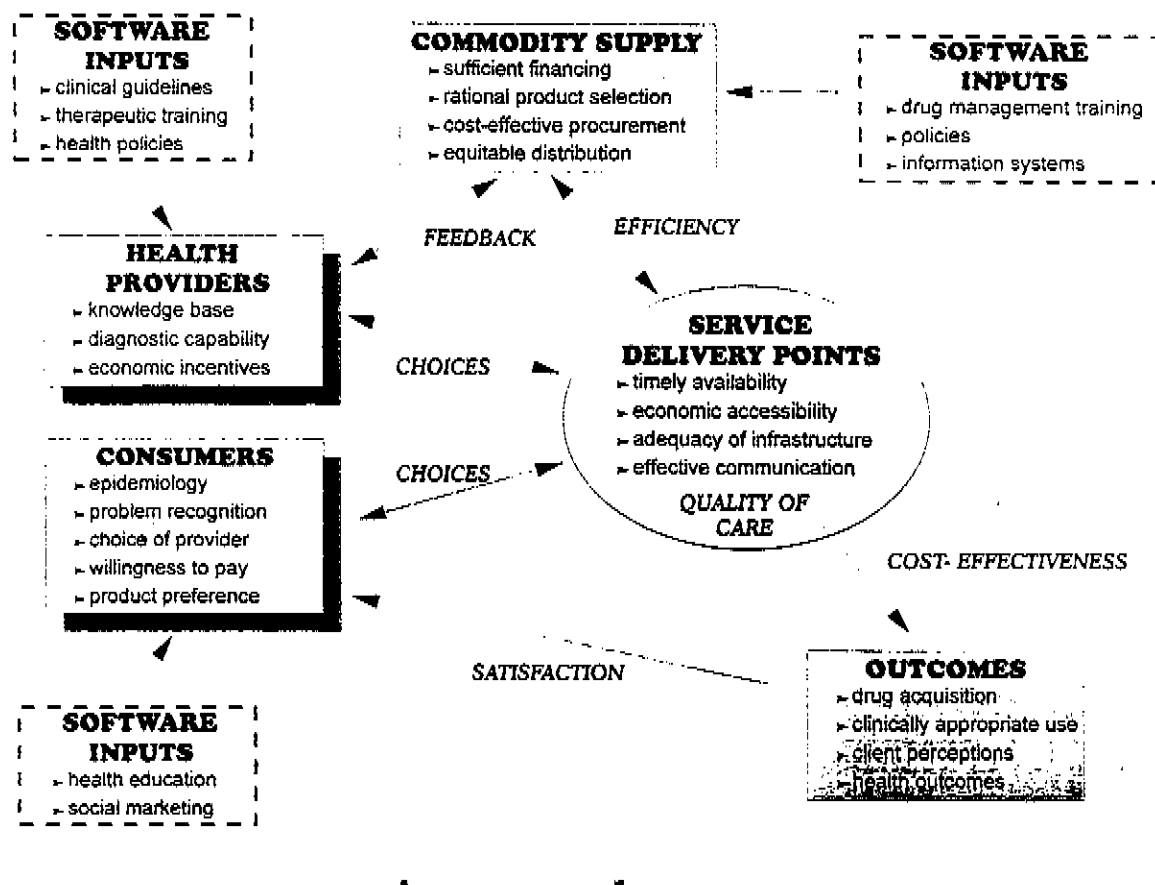
**Rational Pharmaceutical Management Project  
Mothercare Project**

### ***Project Objective***

***Quantify the global costs of pharmaceuticals and medical supplies to provide a defined set of reproductive health services.***

- ▶ **Stage 1: Estimate the costs of treating one episode of a defined set of RH problems**
- ▶ **Stage 2: Use published data to make a global cost estimate for pharmaceuticals and supplies**
- ▶ **Stage 3: Country-specific studies to estimate costs, based on local data**
- ▶ **Possible Stage 4: Refine cost estimates based on more detailed analysis of local RH systems**

## Conceptual Model: Pharmaceutical Costs of Reproductive Health Services



### Estimating the Global Cost of RH Pharmaceuticals and Medical Supplies

#### Stage 1: Estimate hypothetical cost per case

- List of relevant RH problems
- Normative treatment guidelines
- Pharmaceuticals-of-choice and associated medical supplies
- International reference prices

## Defined Set of RH Problems

### 1. Complications related to pregnancy/delivery

sepsis	endometritis	unsafe abortion
hemorrhage	obstructed labor	dysfunctional labor
lacerations	mastitis	eclampsia / preeclampsia
tetanus	urinary tract infection	malaria tx./ prophylaxis

### 2. Maternal malnutrition

hookworm	anemia / folic acid defic.
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### 3. STDs and other infections

syphilis	gonorrhea	chlamydia
HIV / AIDs	pelvic inflam. disease	

### 4. Neonatal complications

asphyxia	hypothermia	neonatal sepsis
ARI	ophthalmia neonatorum	

### 5. General

pain control	fever	dehydration
allergic reaction	infection control	basic supplies



### PHARMACEUTICAL PRODUCTS AND MEDICAL SUPPLIES PRICE LIST FOR SELECTED REPRODUCTIVE HEALTH PROBLEMS

#### PART 3. STDs and other infections

SYPHILIS											
Product	Qty	Unit	Strength	Route	Pack	Unit Price	Total Price	Tax	Net Price	Remarks	
Benzathine penicillin G	1	2.4 MU		1 IM	vial	1	2.4	0.4221	U	0.422	
Sterile water for above	1	5 ml		1 IM	vial	1	5	0.1208	U	0.121	
Erythromycin	2	250 mg		PO	tablet	4	15	1000	0.0808	U	4.836
									subtotal	5.379	
									20 %	1.0758	
									total	6.4548	
ARTERIAL											
Procaine	1	1 MU		1 IVIM	vial	1	10	10	0.2548	U	2.548
									subtotal	2.548	
									20 %	0.5092	
									total	3.0572	
SUPPLIES											
Syringe (1st choice)	0784000	1	0.65	0.65						RPR	
									subtotal	0.65	
									20 %	0.13	
									total	0.78	
Syringe (alternate)	0784000	10	0.65	6.5							
									subtotal	6.5	
									20 %	1.3	
									total	7.8	

PHARMACEUTICAL PRODUCTS AND MEDICAL SUPPLIES PRICE LIST FOR SELECTED REPRODUCTIVE HEALTH PROBLEMS							
SUMMARY							
HEALTH PROBLEM	COST	FIRST-LINE THERAPY		ALTERNATIVE THERAPY			
MALARIA PROPHYLAXIS	Drugs	0.7596		3.1452			
	Medical supplies						
	TOTAL	0.7596		3.1452			
	Equipment						
HOOKWORM	Drugs	0.0604		0.2832			
	Medical supplies						
	TOTAL	0.0604		0.2832			
	Equipment						
ANEMIA FOLIC ACID DEFICIENCY	Drugs	0.5412					
	Medical supplies						
	TOTAL	0.5412					
	Equipment						
SYPHILIS	Drugs	6.4548		3.0552			
	Medical supplies	0.78		7.8			
	TOTAL	7.2348		10.8552			
	Equipment						
GONORRHEA	Drugs		5.64	7.7724	0	1.8996	
	Medical supplies	0.78		0.78	0.78		
	TOTAL	0.78	5.64	8.5524	0.78	1.8996	
	Equipment						
CHLAMIDIA	Drugs	0.2448		0.7392	2.7084	4.62	
	Medical supplies						
	TOTAL	0.2448		0.7392	2.7084	4.62	
	Equipment						
PID	Drugs			109.0584	109.6428	110.4504	7.8144
	Medical supplies						
	TOTAL			109.0584	109.6428	110.4504	7.8144
	Equipment						

## Estimating the Global Cost of RH Pharmaceuticals and Medical Supplies

### Stage 2: Estimate morbidity-based need

- Population size & age structure
  - Community prevalence / incidence
- or
- Utilization by diagnosis

### Available data from "representative" countries

- by region
- by socioeconomic status
- by epidemiologic profile

### **Stage 3: Using Country-Specific Data to Modify Global Cost Estimates**

- ✓ ***Gather country-specific data on:***
  - prevalence / incidence of RH problems
  - population size & age structure
  - treatment guidelines or practice standards
  - pharmaceuticals-of-choice
  - drug and medical supply costs
  - (current service utilization and drug supply)
  
- ✓ ***Recalculate cost model to examine:***
  - differences in global estimates
  - sensitivity analyses
  - (unmet need for RH pharmaceuticals)

---

### **Limitations of Approach**

- ✓ ***Problem assumptions:***
  - treatment of total population at risk
  - adherence to optimal treatment practices
  - use of low-cost drugs of choice
  - system efficiency
  
- ✓ ***Uncertain data availability and quality***
  - drug prices (especially in private sector)
  - epidemiology of RH problems
  - RH service utilization by sector

## **Stage 4?: Refining Cost Estimates Using Rapid Assessment Methods**

- ✓ **Availability of RH products**
  - public and private sector
  - central, district, and facility level
- ✓ **Prices of RH products**
  - public and private procurement
  - private retail survey
- ✓ **Utilization and expenditures**
  - records in public and private institutions
  - private sector survey
- ✓ **Areas of inefficiency**
  - losses in procurement and distribution
  - failure to follow guidelines

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**A Rational Package for Antenatal Care:  
Economic Evaluation Alongside the WHO Multi-centre  
Randomized Controlled Trial**

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Aim of trial

“To define and evaluate a new model of antenatal care that includes only those components which have been demonstrated to be effective in improving maternal and peri-natal outcomes”

New model

- ❖ 4 visits
  - ❖ health educ/info for mother, stressing danger
  - ❖ signs of complications + actions to be taken
  - ❖ specific tests by visit + actions for different
  - ❖ test results
-

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## Objectives

- ❖ to conduct a multi-centre, multi-national controlled trial comparing two models of antenatal care
  - ❖ to establish the relative merits of each model
  - ❖ to test whether the new model is more effective than the traditional multi-visit model with regard to maternal morbidity, pre-natal morbidity, satisfaction and cost
- 

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## Rationale

- ❖ need to test merit of pre-natal care
  - ❖ high levels of maternal and peri-natal morbidity
    - potential big impact
    - also easier to detect change
-

---

## Range of Outcome Indicators

### *Maternal Health*

- ❖ specific morbidities and severity
- ❖ days in hospital

### *Neo-Natal Health*

- ❖ peri + neo-natal morbidity
- ❖ birth weight
- ❖ gestational age and specific morbidities
- ❖ days in special care (inc. intensive care)
- ❖ condition at discharge

### *Process Indicators*

- ❖ avg. duration of contact between patient and provider
  - ❖ avg. waiting time of patient
  - ❖ patient and provider satisfaction with care
  - ❖ perceived quality of care
- 

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## Main Aim of Economic Component

To assess whether there is likely to be an overall reduction, or no change, in resource requirements arising from the new program of antenatal care - both for health care providers and for women using the service - without adversely affecting health outcomes for women and babies

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## Secondary Aims

- ❖ To examine, and seek to explain, variations in the cost-effectiveness between health care facilities and countries
  - ❖ to review evidence for patterns of provision of antenatal care in selected countries with less organized maternity services
  - ❖ to estimate the economic implications of either of the programs compared in the WHO trial
- 

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*Phase 1 - feasibility*

*Phase 2 - full study*

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## Aims of Phase 1

- ❖ to build a working framework for data collection
  - ❖ to propose funding for a full economic evaluation
- 

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## Objectives

- ❖ understand the trial management structure
  - ❖ describe the diversity of factors operating in each site
  - ❖ assess where routine or trial data needs to be supplemented and examine alternative mechanisms for collecting data
  - ❖ explore methods of validating data
  - ❖ identify local collaborators and discuss future progress
-

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## Methods Used for Phase 1

### *Approach*

- ❖ Unstructured interviews/discussions
  - ❖ Document reviews of published (eg. annual reports, academic papers) and unpublished material (hospital accounts)
  - ❖ Structured interviews/discussions
  - ❖ Quantitative collation of activities in each provider unit
- 

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## Methods Used for Phase 1

### *People*

- ❖ Health service managers/administrators at provincial/city levels
  - ❖ Health service providers at hospital and clinics
  - ❖ Staff in support services at hospital and clinics
  - ❖ Women using maternity services
  - ❖ Trial team
-

---

## Methods Used for Phase 1

### *Subjects*

- ❖ structure and organization of services
  - ❖ details of accounting practices
  - ❖ flow of patients through services
  - ❖ alternative activities for women using service
- 

---

## Main Results from Phase 1

### *Health System Costs*

- ❖ data requirements for economic component
  - ❖ data available from the data set
  - ❖ availability of other data for the economic component
  - ❖ data collection requirements and research inputs
  - ❖ management in each country
-

---

## Main Results from Phase 1

### *Women's Costs*

- ❖ data requirements for economic component
  - ❖ data available from the trial data set
  - ❖ data availability, quality and validation
  - ❖ data collection requirements and research inputs
  - ❖ management in each country
- 

---

## Objectives of Phase 2

### *Health System Costs*

- ❖ to measure physical resource consumption for each form of care given to women and babies
  - ❖ to value physical resources in money terms using costs, prices or shadow prices
  - ❖ to estimate unit costs using top-down method, with validation of key variables via a bottom-up costing
  - ❖ to calculate overall cost-effectiveness of antenatal and delivery care
-

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## Objectives of Phase 2

### *Women's Costs*

- ❖ to finalize and pilot the women's questionnaire to facilitate collection of data on the costs they face in attending antenatal care
- 

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## Objectives of Phase 2

### *Both*

- ❖ to estimate the magnitude of each type of cost to women and the health sector
  - ❖ to perform an inter-country comparison and seek to explain any variation
  - ❖ to explore the possibilities of extrapolating the results to other countries
-

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## Future Results for Presentation

- ❖ unit costs by type of care (to health sector and women)
  - ❖ incremental cost-effectiveness of new model with old
  - ❖ sensitivity analysis to explore
    - uncertainties
    - range of unit costs
    - variability between and within countries
  - ❖ factors influencing cost-effectiveness
- 

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## Interest

- ❖ International Organizations
  - ❖ Overseas Development Administration
  - ❖ Participating countries
    - national decision making
    - district planning and management
    - provider unit management
  - ❖ Economists
-

WHO Division of Reproductive Health

*Mother-Baby Package  
Costing Workbook*

World Health Organization  
Division of Reproductive Health  
Maternal and Newborn Health Unit

*Mother-Baby Package  
Costing Workbook*

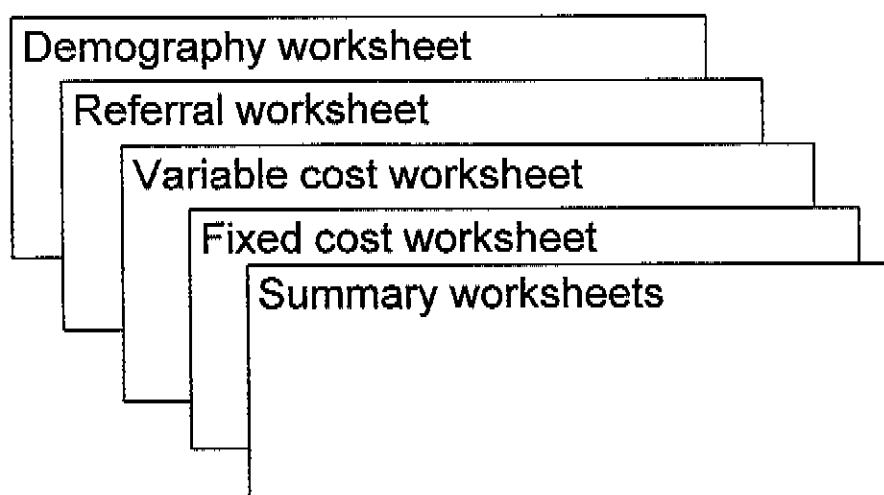
- Objective: to provide rough cost estimates
- Target: programme planners, decision makers
- Implementor: local economist or statistician

WHO Division of Reproductive Health

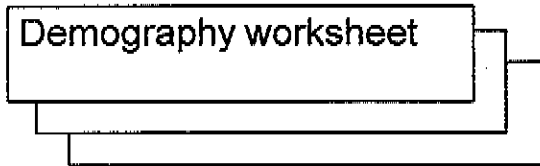
*Mother-Baby Package  
interventions*

- Antenatal care
  - Basic antenatal care
  - Anaemia
  - STDs
  - Pre-eclampsia
- Essential care for obstetric complications:
  - Haemorrhage
  - Obstructed labour
  - Eclampsia
  - Sepsis
  - Abortion complications
- Clean and safe delivery for mother and newborn
- Family planning

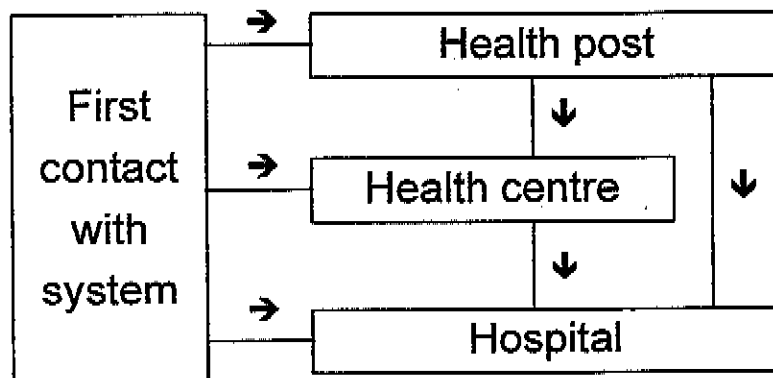
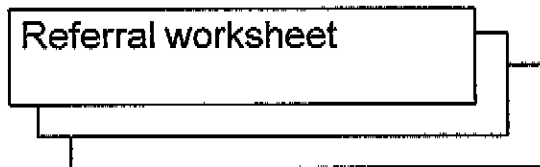
Workbook layout



### WHO Division of Reproductive Health



- Population
- Birth rate
- Incidence or prevalence of conditions



## WHO Division of Reproductive Health

### Variable cost worksheet



- Standard treatment
- Inputs
- Levels

### Fixed cost worksheet



- Salaries and Training
  - Clinical
  - Support
- Management costs, IEC, etc.
- Capital costs - facilities, equipment, etc..
- Transport

## WHO Division of Reproductive Health



Summary worksheets

- Total cost
  - by intervention
  - by input
  - by level
- Fixed / variable cost breakdown
- Unit cost
  - per client
  - per capita

## Incremental Cost

- One model estimates cost of “current practice”
- Second model estimates cost of “rational and expanded treatment”
- Difference between two models represents incremental cost

## WHO Division of Reproductive Health

### Reproductive health interventions *not* included in workbook

- Cancer screening and treatment
- STDs and FP in *non-pregnant* women and partners
- HIV/AIDS
- FGM, harmful practices, and violence against women
- Sexual development, maturity, fulfillment
- Infertility
- Activities targeted at adolescents

### Development

- 1994 - first draft (Bobadilla and Cowley)
- 1995 - extensive revision (Lissner with WHO team)
- 1996 - guidelines developed (Wallinga)
- 1996 - first application (WHO)
- 1997 - validation (WHO, Weissman, MotherCare,  
Abt Associates/PHR)
- 1997 - revision and publication (WHO)



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