Foreword

The World Bank's *World Development Report 1993: Investing in Health*, the sixteenth in the World Development Report series, examined the interplay between human health, health policy, and economic development. Underlying the conclusions of *Investing in Health* is a series of economic, epidemiological, demographic and institutional analyses. Many of these analyses present original data and interpretations; and most of them are lengthy and somewhat technical. In order to make these analyses available to the policy and scholarly community, I have asked the authors to publish them in a series of background papers; this is one paper in that series. Titles of the other background papers appear on the following page. Views and conclusions expressed in the background papers are those of the authors and do not necessarily reflect those of the World Bank group.

In this background paper -- one of two dealing with population and family planning -- Cochrane and Merrick explore the interaction between family planning and health. In particular they explore how family planning programs and delivery systems can be reoriented in order to enhance their impact on health outcomes. The analyses points to the importance of improved method mix, a broader range of services and greater emphasis on information and counseling.

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World Development Report 1993

October, 1994
Background Papers


1. Bobadilla, Jose-Luis, Peter Cowley, Philip Musgrove and Helen Saxenian, “The Essential Package of Health Services in Developing Countries”.
2. Cochrane, Susan H. and Thomas W. Merrick, “Family Planning and Health”.
4. Hecht, Robert M. and Vito L. Tanzi, “The Role of NGOs in the Delivery of Health Services in Developing Countries”.
8. Jamison, Dean T., “Disease Control Priorities in Developing Countries: An Overview of Cost-Effectiveness Assessments”.
10. Lau, Lawrence, Abdo Yazbeck, Kenneth Hill, Dean Jamison and Jee-Peng Tan, “Sources of Child Health Gains since the 1960s: An International Comparison”.
11. Michaud, Catherine and Christopher Murray, “Aid Flows to the Health Sector in Developing Countries”.
13. Murray, Christopher, Ramesh Govindaraj and Gnanaraj Chellaraj, “Global Domestic Expenditures in Health”.
14. Murray, Christopher, Jay Kreuser and William Whang, “Cost-Effectiveness Model for Allocating Health Sector Resources”.
15. Pritchett, Lant and Lawrence H. Summers, “Wealthier is Healthier”.
16. Yazbeck, Abdo, Jee-Peng Tan and Vito L. Tanzi, “Public Spending on Health in the 1980s: The Impact of Adjustment Lending Programs”.
Family Planning and Health

by

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The findings, interpretations, and conclusions in this paper do not necessarily represent official Bank policy.
Family Planning and Health

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Bibliography
FAMILY PLANNING AND HEALTH

I. Introduction

Giving women better control over their reproductive lives brings both individual and societal-level health and welfare benefits. These benefits involve more than just the avoidance of sickness and disease. Proper timing and spacing of births enable women to take better care of themselves, their children and other family members. Poorly timed and inadequately spaced births increase the risk of morbidity and mortality for both mothers and children. They are also an increased burden on the health-care system and draw resources away from other uses. Three areas where reproductive health outcomes could be improved warrant specific attention: (1) avoiding high-risk pregnancies, (2) reducing the number of deaths from unsafe abortion, and (3) reducing health risks in fertility control methods. These areas will be discussed. Then the programmatic and policy requirements for reducing reproductive risks through family planning will be addressed. Before proceeding to the substantive discussion, it is useful to consider the nature of the evidence needed and available to address these issues.

II. Nature of the evidence

In developing countries, most rural peoples do not have contact with the registration or medical systems. Thus, it is impossible to rely on vital registration data, or medical-system statistics to measure the level of mortality or its correlates to the extent that one can in developed countries. Household-survey data have become a major source of our knowledge about infant and child mortality in developing countries. Surveys are a less useful source for data on maternal mortality for two reasons: (1) maternal mortality is a much rarer event than infant and child mortality, and (2) while it is the mother who is interviewed...
about the survival of children, it is difficult to find a respondent who would be knowledgeable in all cases about the death of a woman in childbirth.\textsuperscript{4}

Even if one can acquire information on deaths and fertility patterns, those patterns are only one of several potential causes of mortality. In addition, fertility's effect on infant and child health operates through biological and behavioral channels. For example, when a breastfeeding mother becomes pregnant her breast milk is reduced and thus the preceding child may be damaged by an early subsequent pregnancy, or if a mother becomes pregnant too soon after a preceding child she may be too depleted for the fetus to develop fully. On the behavioral side, if there are too many young children in a household, a mother may not have the time to adequately care for each child, or household resources may be inadequate to provided need food, shelter or medical care for all children. Sorting out the multiple channels and multiple causes of high fertility's effect on child survival is extremely complex, and our knowledge to date must be tempered with consideration of this complexity.\textsuperscript{5} Fortunately, a large body of survey data from the World Fertility Surveys of the 1970s and the Demographic and Health Surveys of the 1980s and early 1990s has now been accumulated. These surveys offer a wide range of data on fertility, infant and child mortality, breast feeding, certain health care variables and some socio-economic background variables. The scope of this brief review does not permit us to explain the complexities of measuring the effect of fertility patterns on mortality. (See the other working paper in this series by Cochrane et al. for details) Therefore, we will present the general consensus on the relationships and provide references for those who wish to pursue the details further.

III. Avoiding high-risk pregnancies

Pregnancy always carries some risk to the mother, and birth carries risks to the child, but some pregnancies have predictably higher risks to mothers and children. By avoiding such high-risk pregnancies, maternal and child health can be improved.\textsuperscript{6} It is generally the case that pregnancies that occur too early or too late in a woman's reproductive life, those that are too closely spaced, those that occur to women who have already had many births, those that occur to women

\textsuperscript{4} Some experimenting is being done to see if women can accurately report on the survival of their sisters.

\textsuperscript{5} See Boerma and Bicego (1991) and National Research Council (1989).

\textsuperscript{6} Reproductive health risks are not limited to high-risk groups. In fact, the majority of maternal deaths occur outside these groups, even though the relative risk is less.
who have health problems such as high blood pressure and diabetes that could be aggravated by pregnancy, and those that are unwanted — all pose health risks for mothers and/or for their children.

**High Risks to Infants and Children:** The factors that cause higher risk for infants and children are somewhat different from those that cause higher maternal mortality. Births to older women and high-parity births are less likely to elevate the risk for the child than to elevate risk for the mother, while births to very young women bring high risks to both mother and child. Closely spaced births are more likely to affect the survival chances of the child than of the mother. Also a mother's death from complications of pregnancy and labor is almost always associated with the death of her infant. An estimated 7 million perinatal infant deaths are associated with poor maternal health and poor management of pregnancies (see Tinker and Post, forthcoming).

The timing of pregnancies is important for the health of babies. For example, proper spacing of births improves the survival chances of infants and reduces their vulnerability to health risks. Infants whose births are spaced two years apart have significantly better survival chances than those born after shorter birth intervals. Proper spacing also reduces the health risks among children one to five associated with the poorer nutrition and lack of attention given to children born after a short interval, particularly baby girls in some regions of the world. Longer birth intervals also increase the survival chances of toddlers and young children who are the older of two siblings.

The adverse effects of these risk factors on the health of infants and children are evident from differences in child survival. World Fertility Survey data (Table 1) show comparative risks of dying for infants and children with several risk factors. In Indonesia, infants with a sibling born in the prior 24 months are 1.85 times as likely to die within the first year of life as infants without a sibling born in that interval. In Jordan, infants in the former group have an even higher mortality risk — three times that of infants in the group with adequate spacing. Similar patterns are observed in Kenya and Mexico. The increased mortality risk of having siblings less than 24 months older persists among toddlers, and except in Mexico, also among young children below age five.

Birth parity is a second influence on the probability of childhood deaths.

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7 These risks are estimated holding constant parity, maternal age, spacing and level of maternal education where appropriate (see Hobcraft et al., 1985).
The first birth has consistently higher risk in the first year of life, but except for Mexico, higher parity does not systematically raise risks (See Table 1). Maternal age, a third risk factor, also shows mixed effects. Births to women younger than 20 years, and particularly under 18, have consistently higher risks throughout the first five years of life, but births to older women are not always at greater risk of death. This pattern was only observed once it was possible to look at large data sets from many countries and control for maternal education, parity, along with birth spacing and maternal age.

High Risks to Mothers: As indicated above, fewer data exist on maternal mortality in developing countries. Therefore, one must consider the relative risks reported as rough approximations. The World Health Organization estimates that in half of the developing countries, maternal mortality is the first or second most common cause of death among women 25 to 34. In all others, it is in the top ten (see Winikoff, 1987, p.415). The chances that a woman will die from pregnancy related causes depends on the chance of dying at each pregnancy and the number of pregnancies that a woman has. The former depends on a number of factors: the adequacy of health care available to the woman, her general health and her age and parity at the time of the pregnancy and whether the birth is wanted or not. Each year, an estimated 500,000 maternal deaths occur in the developing world. For each of those deaths, there are, in addition, between 10 and 16 cases of maternal morbidity. Data from India indicate that, although women have a higher probability of dying during child bearing years than men, women are less disadvantaged where the fertility is lower. After adjusting for differences in literacy, women have "only" an 18 percent higher risk of dying at a total fertility rate (TFR) of three. At a TFR of five, they have almost a 40 percent higher risk. To put these mortality differences in perspective, it has been estimated that in high-fertility areas of West and Central Africa women have a 1 in 20 chance of dying from maternal causes because of both high risks for each pregnancy and because women have many pregnancies, while in East Asia, a woman would have a 1 in 722 chance of maternal death due to better survival chances at each pregnancy and to having fertility at least half that in West and Central Africa. In Northern Europe, with its even lower fertility and much better health facilities, the chances are 1 in 10,000 (Tinker and Koblinsky, 1993).

The risks of maternal death depend on both age and parity. Girls who have a birth before age 18 are three time more likely to die in childbirth than women who have their first birth between the ages of 20 and 29. First births are generally more risky than second or third births, but as parity rises over three, the risk of maternal mortality tends to increase. There is a debate in the literature about whether high mortality of mothers under 18 and their infants is the result of
young age per se, primiparous status or whether it is due to the fact that women who have births early tend to be from poorer families and receive less health care and poorer nutrition. It has been suggested that the medical causes of higher risks in early child bearing are related to physiological factors such as smaller pelvises (particularly for women under 16), pregnancy induced hypertension, more frequent pregnancy aggravated malaria. This evidence has not clarified whether it is age per se or poverty and lack of medical care that are most important in contributing to these hazards (National Research Council, 1989).

Depending on the ages and reproductive intentions of expectant mothers, adequate timing, spacing or limiting of pregnancies would reduce such risks. Many women in developing countries say they want to space or limit their births but are not doing so. Their reasons for not using contraception vary by region. In Sub-Saharan Africa, the lack of knowledge and access are very important. In almost all countries, health concerns or side effects are of major concerns. Almost nowhere are husbands objections or religion per se specified as reasons for non-use by those who say they wish to limit fertility. Others are at risk and do not express a desire to limit or space, but might do so if they received adequate counseling about the health risks of a poorly timed pregnancy.

The effect of short birth intervals on maternal survival has proven hard to document, and there is no definitive evidence on this link. There is a hypothesis that women's health and nutritional status are eroded by many and frequent pregnancies — the maternal depletion syndrome. This relationship has also been hard to verify. Some evidence does indicate that combining a heavy burden of childbearing with a heavy burden of physical work does have detrimental effects on maternal nutrition. In general, the data on maternal morbidity are even harder to come by than maternal mortality. An international epidemiological survey of women's reproductive health would substantially increase the understanding about the consequences of high fertility for women's health and the appropriateness of family planning counseling and contraceptive selection for women's health conditions.

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8 Religion, fatalism and ignorance of family planning seem to important factors that explain why women do not specify that they want no more children even at high levels of fertility. There is evidence that increasing knowledge of contraception and access to a range of methods increases the proportion of women who say that they wish to restrict fertility when other factors such as age, number of living children, education, urban residence and assets are controlled. (See data from Zimbabwe, Colombia and Tunisia in various papers by Cochrane and Guilkey.)

9 See Winikoff, 1987, and Herz and Measham, 1987, for reviews of literature on this subject.
IV. Reducing the health risks from unsafe abortion

Unwanted pregnancies are a matter of health risk for all women, particularly when unwanted pregnancies lead to unsafe abortions. The avoidance of unwanted pregnancy will protect women from exposure to these risks. Quantifying these risks and the number of abortion related deaths and injury is extremely difficult because in most countries of the developing world it is illegal and will not be reported by the person who preforms it, the woman or her family.

It has been estimated using WFS data that about a quarter of all births were unwanted in the late 1970s (Maine, 1985). Of the estimated half-million women who die from pregnancy-related causes in developing countries, at least one-in-five dies because of complications from an unsafe abortion. The unwanted pregnancies that move women to seek abortions can result from lack of access to or knowledge about family planning, or from the failure or discontinued use of a method for which the women received inadequate counseling or follow-up on side effects. WHO data indicate that the majority of women who seek unsafe abortion in developing countries are married women with children. The first line of attack in reducing the death toll from unsafe abortion is high-quality sex education and family planning information and services, including adolescents and other underserved groups. The next line of defense depends on whether or not abortion is legal. Where it is legal, it is necessary to make sure that safe abortions are available. This needs to be backed up with appropriate abortion management: appropriate treatment for complications of abortion and appropriate post-abortion counseling on family planning methods. There is a risk of pregnancy with even the most effective planning methods such as oral contraceptives. Therefore, making safe abortion widely available as a backup for contraceptive failure (and for women who do not use contraception) is still needed to prevent maternal mortality and morbidity from unsafe abortion.

10 Women may not want a specific pregnancy for a number of reason: (1) they want no more children, (2) they want to delay the next pregnancy or (3) they may not want the pregnancy of a specific partner that they suspect to be the father, as in the case of marital infidelity.

11 These estimates are generally arrived at by examining the proportion of births that women report as being unwanted or in some cases mistimed. Since women may be reluctant to report births after the fact as unwanted, this is an underestimate. Likewise, since some unwanted pregnancies have been aborted, they are not included in this number. Therefore, undoubtedly more pregnancies than births are unwanted.

12 Both India and the U.S. offer examples where abortion is legal, but where, due to limitations on funding, safe, legal abortions are not readily available to all poor women.
V. Reducing health risks in fertility control

Risk not only attach to pregnancy, but to a lesser extent to the use of methods to prevent births. Although not all side effects of contraception are serious, some are. It is important to weigh these effects against the risks associated with childbearing that were discussed above. Figure 1 shows the risks from various contraceptive methods and from child bearing. The fact that the risks of pregnancy related deaths are so much higher in developing countries, means that in general contraceptive methods have lower relative risks there. Figure 1 shows the relative risks of women in rich and poor countries respectively dying from complications of specific contraceptive methods and from dying from pregnancy arising from unprotected sex. The risks depend on the age of the woman, the method and the level of development. For example, in developed countries the risk of dying form the complications of oral contraceptives over the age of 35 exceeds the risk from dying a pregnancy, i.e. the dark solid line falls below the light solid line after age 35. In developing countries on average, the risks of pregnancy substantially exceeds the risks of dying from all contraceptive methods at all ages due to the much greater maternal morality risks.

Survey data point to a considerable unmet need for family planning information and services among women who want to space or limit births. In some cases, women do not have access to the temporary methods appropriate for spacers. Others may be users of temporary methods but due to inadequate information about methods use them poorly, resulting in method failure or discontinuation. Of course, in some cases, women are not motivated to use methods consistently just as patients everywhere fail to follow doctors instructions on the use of medication. This well known compliance problem is most difficult for oral contraceptives and coitus related contraceptive. Counseling can help, but the provision of alternative methods for individuals who are likely to have compliance problems is also of great importance. The quality of family planning services is, in many instances, inadequate for women who want to space. In other instances, women do not have access to permanent methods and are exposed to long periods of failure with temporary methods because method mix is limited, providers are not trained to recognize and respond to health problems and other client concerns, or there is inadequate counseling about side effects and little follow up with problems that arise.

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13 These figures actually overstate the risks from oral contraceptives because they were complied based on data from periods when pills generally had higher dosages than is true today.
No single family planning method can serve the needs of all women. Programs that push one method, particularly permanent ones such as sterilization, will not appeal to spacers. Legal and medical regulations on the provision of a particular method may be having the opposite effect from the one intended: instead of reducing health risks they increase them by putting unnecessary barriers in the way of women who would benefit from having access to that method.

There are some health risks associated with the use of contraceptive methods: pills can cause circulatory problems for older women, particularly those who smoke; IUDs are not recommended for groups at risk for STDs or women with certain gynecological complications; sterilization is a surgical procedure, so that infection is a risk, albeit remote unless the procedure is done under unsanitary conditions. Side effects (menstrual irregularity, for example) may be encountered, though users may not know this and be anxious about them. Users need to be counseled about side effects and their significance. Women need to be alerted to which side effects are serious and need to be treated and which ones are minor and of no significance. In addition, if side effects bother women they should be told of alternative methods.14

Most method-related risks are rare, particularly when family planning services are of high quality. These risks can be further reduced by selection of the appropriate method for particular users. At the same time, problems arise if service quality erodes. Poor counseling of pill users is associated with high discontinuation rates and method failure. Similar problems arise when IUD users are not well counseled or find it difficult to get follow-up services when they experience problems.

Increased health risks also occur when women who want no more births do not have access to effective contraception provided by permanent or long-term methods. Older, high-parity women who want no more births run higher risk of an unintended pregnancy due to failure or discontinuation of an inappropriate temporary method. The pill, for example, which carries greater risk for the women noted above (older women, smokers, women with circulatory problems). As indicated in Figure 1, even though the chances of getting pregnant are lower for these older women, their chances of dying are very much greater.

14 A recent DHS survey showed that in one country with a program ranked as slightly above average, over 90% of pill users were not counseled about side effects, proper use of the method or alternative methods available. This problem arose because pills were provided off prescription by pharmacies. Even for the clinically provided IUDs, about 70% of the women were not informed about alternative methods available if a women had a problem.
At the same time, there are non-contraceptive health benefits for users of oral contraceptives, for example, prevention of ectopic pregnancy, reduced risk of endometrial and ovarian cancer, and reduction of menstrual problems.

VI. Policy and Programmatic Implications

The potential health benefits of family planning do not materialize fully in many developing countries because existing programs are lacking in coverage and quality. Two major issues require attention: expanded access and improved quality.

Increased Access to Services: Achieving these outcomes requires that services be expanded to meet the needs of women who want to space or limit their births but do not have access to services. The 1990s present new challenges in meeting these needs. While fertility rates have declined in many countries, the number of women entering their reproductive ages continues to increase. Further attention needs to be focused on the large numbers of unmarried adolescents who, up to now, have not been adequately served by family planning programs targeted on married women. Expanding numbers of women of reproductive age, falling desired family sizes and increased sexual activity among the unmarried mean that many countries have had to "run faster in order to stand still" in meeting the demand for family planning. Limited developing country government resources and the competition for foreign assistance funding puts a further squeeze on the capacity to expand services. Careful planning is required. Resources need to be marshaled and allocated efficiently.

While it is essential to provide services for family planning and reproductive health, they need not be provided through government facilities. As described in the World Development Report: Investing in Health, there are a variety of combinations of public, private and NGO provision and financing of family planning as well as other health services. There are also cost and benefits of each combination of provision and finance. Public finance is needed if the poor are to be served, but government can either subsidize private providers or NGOs or provide the services directly. The arguments against government provision revolve around the lack of quality of government services and the lack of incentives for government providers to reduce costs. This argument, however, is not completely valid. If private providers are protected from competition, they will be no more likely to be efficient or to provide high quality services than public providers. Likewise, a subsidy to a private provider to provide a service such as family planning only benefits the poor, if it is passed on to the poor in the form of lower prices. Where there is not public monitoring of the pricing of private services to the poor or
substantial competition among private providers, the poor may not benefit from public provision.\textsuperscript{15} Thus, the issue of who is to provide services for the poor and who should pay for them should not be decided on narrow ideological grounds, but by careful evaluations of the capacities of each provider in each contexts.

Some functions such as the provision of information and research have much clearer public finance arguments for government support than others, but still there exists a possible distinction between who provides the service and who pays for it.

Improvement in the Quality of Services: Many women are contraceptive users but experience problems associated with use of an inappropriate method, side effects, discontinued use or method failure. Others are at risk because of inadequate screening for STDs and other reproductive health problems. Most of these problems can be traced to poor quality services: a limited offering of methods, poorly trained providers, inadequate screening and counseling, lack of follow-up when problems occur (Bruce, 1990). Programs that appear highly effective in terms of contraceptive prevalence can still have serious quality problems. These problems require action on a number of fronts: (a) broader method mix, (b) selection and training of providers, (c) education of clients and (d) program management.

a. **Broader Method Mix:** Method mix is an telling indicator of family planning service quality. Potential family planning users who are not offered methods appropriate to their specific needs are less likely to begin using family planning and more likely to discontinue use and experience a failure or other health hazards. Programs that emphasize sterilization and offer no or few temporary methods do not meet the needs of spacers. This has proven very difficult to do in countries where the program is centered around a set of incentives for the adoption and recruitment of acceptors of permanent methods. Thus improving the method mix has much broader implications than just introducing new methods into the clinic and training personnel. Attention should also be given to replacing temporary methods that carry higher risks of side effects or discontinuation (the steel-ring IUD used in China, high-estrogen pills still dispensed in some countries) with more appropriate alternatives (low-estrogen pills, the Copper-T IUD). Barriers that inhibit the availability of a broad range of appropriate methods need to be removed: unnecessary medical screening, approval procedures that duplicate processes already completed in other countries, packaging and labeling require-

\textsuperscript{15} This is well attested to with cases of medicare fraud in health systems such as those in the U.S.
ments that perform no useful function but increase the cost of methods, import restrictions or tariffs that make procurement difficult. In countries where public-sector providers are required to use products on an "essential-medicines" list, procurement of contraceptives may be blocked by failure to have them on such lists.

b. **Selection and Training of Providers:** Even when an appropriate range of contraceptive methods is available, it is not guaranteed that they will be offered to users due to provider bias. Service personnel need to be trained to recognize and respond to the varying need of their clients. Sensitivity to client feelings and needs is an important criterion for both the selection and training of providers. Attention also needs to be given to cultural and social sensitivities: in societies with strictures on male-female contacts, recruitment of female providers is crucial to service quality. The issue of incentives whether monetary or physiological, are also central. This is particularly true where providers have been in a habit of either receiving money or some other form of performance related payment.

The quality of client-provider interactions is also important for effective, continued use of methods even when the appropriate method is provided. Inadequate knowledge of methods on the part of providers or bias for or against a specific method can distort the method mix. Providers need to be trained in how to inform clients about potential problems with a methods and about when and how to follow up on them.

c. **Education of Clients:** Despite the fact that most surveys indicate a high level of awareness of contraceptive methods by potential users, there is solid evidence that there is little detailed knowledge of specific methods. High rates of pill failure have been linked to poor understanding about when to take the pill and what to do when a user forgets to take one. Rumors about the IUD and inadequate understanding of minor side effects have caused many users to remove them in the absence of significant problems. Clear and accurate information for both users and providers of methods is an important remedy to these problems.

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16 Incentives can be provided to either providers of services or acceptors. There is a great deal of discussion of the abuses of incentives. In addition, to the possible use of coercion, there is bound to be distrust between those who accept services if they know that the providers have a financial incentive for provision. Thus, ideally programs are better off without incentives.

17 Poorly educated populations are more difficult to inform about proper use of family planning, about side effects and about alternative methods that would circumvent side-effects. As indicated in the DHS survey referred to above, counseling on pills provided by pharmacies was particularly inadequate.
Clear information is particularly important for post-partum women who want to take advantage of the contraceptive effect of the post-partum amenorrhea brought about by breast feeding. This "natural" method of birth spacing requires a careful breast feeding regime and information on when to use appropriate backup methods. It is also necessary to educate women about the risks of short birth intervals and possibly the effects of age and parity for maternal and child health. Women also must be screened to determine their own, specific health hazards and the dangers of both pregnancy and specific methods.

d. Program Management: Many people think that quality implies higher cost in delivering services. Indeed, some users may require more attention, which adds to the cost of serving them. These costs can be offset by patient-flow efficiencies and by management information systems and other administrative tools to identify and target high-risk clients who need special care. Better training of providers and better education of clients can are also cost-effective. The challenges in keeping up with growing demand for services during this decade and the next call for special efforts to make sure that subsidized services are targeted on those who have the greatest needs. To the extent that these needs can be differentiated according to the methods, screening, counseling and follow-up services required, quality of service can be maintained and improved at the same time that cost containment is exercised.

VII. Conclusions

Although there is still considerable uncertainty about the relative risks of age, parity and spacing of births for mother and child, there is enough evidence to make a convincing case that a decrease in the pace of childbearing would improve the health of children and limiting childbearing to the ages 20 to 34 would improve the health of the mother and to a less extent the health of children. Limiting the number of children would also reduce women’s lifetime risk of pregnancy-related mortality and morbidity, even though parity per se may or may not increase the relative risks. This health rationale must balance the risks from pregnancy against the risks of contracepting. For the most part this balance is quite favorable to family planning. It is necessary to provide access to a wide range of contraceptive methods for both married and unmarried individuals and to provide good education and counseling to clients.

because there was little incentive for pharmacies to discuss alternatives not available through their store. In addition, since pills were such a small portion of the overall activity of the pharmacy, there was little incentive for their owners to become informed about the proper use or side effects.
In addition to the health rationale, there is also the rationale to provide family planning to help women and men have the number and spacing of children that they want. Expanding the range of choice is the major determinant of improved living standards, however measured. There is a large proportion of women in the developing world who either do not want any more children or wish to space their next birth. Many do not have access to good quality family planning or suffer method failures. Among the many adverse consequences of the lack of access to high-quality family planning, is the fact that there are far too many abortions in the developing world. In a few places it is legal and safe, in most places, it is not. As noted earlier in the paper, at least 20% mortality in countries of the developing world is associated with unsafe abortion. In addition to the suffering and loss of these women, there are enormous costs for their families and communities. Clearly, there is a strong complementarily between health rationales for family planning and the rationales of improving couples’ ability to realize their reproductive aspirations and raise their standard of living.
Table 1. The Relative Risk of Dying in Different Periods for Certain Risk Factors

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<th>Mother's Age</th>
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<td></td>
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<td>7+</td>
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1 These are the relative risks of dying if one is born less than 24 months after a previous surviving birth(s). For the uncontrolled estimates, it is compared with a child born 24-47 months after a previous child. For the controlled estimate, it is compared with no children in the previous 24 months and it assumes only one surviving child was born in the previous 23 months.

2 For the uncontrolled estimates, there are three ages with risk given and the comparative group is composed of those 20-29. For the controlled estimates, there are two age categories given, under 20 and over 34. The comparative group is 25-34.

3 For the controlled infant mortality estimates, there are a weighted average of neo-natal and post-neo-natal mortality relative risks.

4 The uncontrolled estimates come from Rutstein (1983) and simply compare the mortality in each category.

5 The controlled estimates are based in multiple log linear model where the previous birth interval, birth order, maternal age, parental education and sex of the child are controlled. The comparison category is no births in the previous 24 months, parity 2-3, maternal age 25-34, and low level of education. For toddler and child mortality, the birth of a subsequent child is al controlled. The estimates come from Hobcraft, et al (1985).
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Bibliography of Family Planning and Health


