Fertility Regulation Behaviors and Their Costs

Contraception and Unintended Pregnancies in Africa and Eastern Europe & Central Asia

Elizabeth Lule, Susheela Singh and Sadia Afroze Chowdhury

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Health, Nutrition and Population (HNP) Discussion Paper

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Health, Nutrition and Population (HNP) Discussion Paper

FERTILITY REGULATION BEHAVIORS AND THEIR COSTS: Contraception and Unintended Pregnancies in Africa and Eastern Europe & Central Asia

Paper prepared with funding from the Swedish International Development Cooperation Agency. The report is a collaboration between the HNP section of the Human Development Unit of the World Bank, the Guttmacher Institute, New York and UNFPA.

Abstract: The report consists of three parts: global trends in fertility, contraceptive use and unintended pregnancies; studies of two regions (Africa and Eastern Europe/Central Asia) and two countries (Nigeria and Kazakhstan) on the costs of fertility regulation behaviors and provider attitudes towards contraceptive use.

Fertility levels have declined steadily over the last three decades but the pace of decline varies among regions. Countries that have achieved a high level of contraceptive use have reached a lower fertility level. A gap continues to exist between actual and desired family size, resulting in unintended pregnancies. More than one-third of the pregnancies that occur are unintended and one in five pregnancies ends in induced abortion. Almost half of all induced abortions are unsafe, and the proportion of all abortions that are unsafe has increased during the last decade. Sixty-six percent of unintended pregnancies occur among women who are not using any method of contraception.

Findings from the Kazakhstan study suggest that providers’ biases towards certain contraceptive methods lead to a reduction in the quality of family planning services and choice of methods. The costing survey suggests that contraceptives are almost 3.2 times more cost-effective than abortion services in terms of birth averted. Abortion services accounted for almost 1% of total public health spending in 2004.

Findings from the Nigeria study suggest that the annual cost of post-abortion care (estimated at $19 million) is approximately four times the cost of contraceptive services (estimated at $4.5 million) to prevent induced abortions; and it consumes about 3.4% of total health expenditures.

Investing in quality family planning programs is a cost-effective way to address unmet need for contraception and reduce the risks of unsafe abortion, thereby improving maternal health. If contraception were provided to the 137 million women who lack access, maternal mortality would decline by 25%–35%.

Keywords: Contraceptive use, unintended pregnancy, fertility, post-abortion care, costs

Disclaimer: The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.
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<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>BCC</td>
<td>Behavior Change and Communication</td>
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<td>ALOS</td>
<td>average length of stay</td>
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<td>CAUP</td>
<td>Campaign Against Unwanted Pregnancy</td>
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<tr>
<td>CBS</td>
<td>Central Bureau of Statistics</td>
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<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>CEPED</td>
<td>Centre Population et Développement</td>
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<tr>
<td>CPR</td>
<td>contraceptive prevalence rate</td>
</tr>
<tr>
<td>CRH</td>
<td>Central Rayon Hospital</td>
</tr>
<tr>
<td>CYP</td>
<td>Couple Years of Protection</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>dilatation and curettage</td>
</tr>
<tr>
<td>D&amp;E</td>
<td>dilation and evacuation</td>
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<td>DALY</td>
<td>disability-adjusted life year</td>
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<td>DHS</td>
<td>Demographic and Health Surveys</td>
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<tr>
<td>E&amp;C</td>
<td>evacuation and curettage</td>
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<td>ECA</td>
<td>Europe and Central Asia</td>
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<td>FGPs</td>
<td>Freelance General Practitioners</td>
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<td>FHI</td>
<td>Family Health International</td>
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<td>HBS</td>
<td>Hospital Based Survey</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>ICRW</td>
<td>International Center for Research on Women</td>
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<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
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<td>IPPF</td>
<td>International Planned Parenthood Federation</td>
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<tr>
<td>IUD</td>
<td>intra-uterine device</td>
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<tr>
<td>KDHS</td>
<td>Kazakhstan Demographic and Health Surveys</td>
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<tr>
<td>LAC</td>
<td>Latin American and Caribbean</td>
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<td>MBP</td>
<td>Mother-Baby Package</td>
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<tr>
<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>MVA</td>
<td>manual vacuum aspiration</td>
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<td>OCs</td>
<td>oral contraceptives</td>
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<td>PAC</td>
<td>post abortion care</td>
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<tr>
<td>QALY</td>
<td>quality adjusted life year</td>
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<tr>
<td>STI</td>
<td>sexually transmitted infection</td>
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<tr>
<td>TFR</td>
<td>total fertility rate</td>
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<td>UNFPA</td>
<td>United Nations Population Fund</td>
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<td>WHO</td>
<td>World Health Organization</td>
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CHAPTER 1: INTRODUCTION AND EXECUTIVE SUMMARY

Sadia Afroze Chowdhury and Pia Axemo

1.1. BACKGROUND

Sexual and reproductive ill health accounts for one third of the global burden of disease among women of reproductive age (15–44 years) and one fifth of the overall burden of disease.¹ Despite a huge increase in contraceptive access globally, an estimated 137 million women in the developing world would like to delay or stop childbearing but are unable to do so (Gill, Pande, and Malhotra 2007). Fifty-one million unintended pregnancies in developing countries occur every year to women not using a contraceptive method. Another 25 million occur as a consequence of incorrect or inconsistent use of a contraceptive method and method failure (Sedgh, Hussain, Bankole and Singh 2007; Singh, Darroch, Vlassoff, and Nadeau 2003). Failure to prevent unintended pregnancies leads some women to terminate them through induced abortion. It has been estimated that one in five of the 205 million pregnancies each year end in abortion, and of the 42 million abortions performed annually, approximately half are unsafe (Sedgh, Henshaw, Singh, Ahman, and Shah 2007). In settings where abortion is restricted or illegal, mortality due to unsafe abortion practices ² can be substantial, accounting for 13 % of maternal mortality globally, and in some countries as much as 25% of maternal deaths are due to unsafe abortion (WHO). At least one-fourth of the estimated 20 million unsafe abortions per year are performed on women aged 15 to 19 (UNFPA).

Pregnancies that are insufficiently spaced apart have health consequences for both the mother and child. Birth intervals of less than 15 months have been shown to more than double the risk of maternal deaths (World Bank and Save the Children 2004). Children born 3 years after a previous birth are healthier at birth and more likely to survive (Rutstein 2002). Pregnancies late in the reproductive health cycle also carry a greater risk of complications such as bleeding and hypertension. Nearly half of the world’s population today is under 25 years of age with the majority living in the low resource countries (World Bank 2007) where reproductive health services are not easily accessible for them. Teenage pregnancies carry a higher risk of obstetric complications such as obstructed labor, eclampsia and fistula formation, and yet teenagers are less likely to receive adequate antenatal or obstetric care, making them twice as likely to die during childbirth as women over the age of 20. The risks faced by a young woman living in a low resource country are further compounded when the pregnancy is unintended or unwanted and she seeks an abortion.

¹ WHO Estimates of DALYs by sex, cause and WHO mortality sub-region http://www.who.int/whosis/en/
² Defined by WHO as a procedure of terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not confirm to minimal medical standards or both.
1.1.1. Demand and Unmet Need for Contraception

Women or couples are said to have an unmet need for family planning if they prefer to avoid or postpone pregnancy but are not currently using any contraceptive method. Factors contributing to unmet need include lack of access to contraceptive services, lack of knowledge about contraceptives or misinformation such as fear of side effects and myths about modern contraception, and social disapproval (Levine et al. 2006; Casterline and Sinding 2000). The poor are less likely to have access to family planning and other reproductive health services. Socioeconomic factors such as women’s educational level, employment status, place of residence, degree of autonomy, and husband’s occupation correlate directly to fertility levels and demand for contraception (World Bank 2007). Government policies also regulate the availability, accessibility, method mix and cost of contraceptives, thus affecting contraceptive use. In 2003, it was estimated that 122.7 million women in developing countries had an unmet need for contraception, with the highest need percentage in Sub-Saharan Africa where it exceeded the percentage of women currently using contraception (Levine et al. 2006).

1.2. Objectives of the Report

The analysis of abortion is complicated by the political and social sensitivities surrounding the practice, and the data on abortion is generally under reported in most surveys. The relationship between the use of contraceptive methods and induced abortions has not been adequately studied due to the unavailability of reliable data. This report, a joint collaboration between the HNP section of the Human Development Unit of the World Bank, the Guttmacher Institute in New York, and UNFPA investigates both supply and demand indicators of abortion in Eastern Europe/Central Asia and Africa. These two regions were chosen, in part, because they represent two contrasting contexts.

In Eastern Europe/Central Asia, where abortion is legally available and frequently practiced, the cost-effectiveness of providing abortion and contraceptive services has been examined as well as the socio-cultural factors that have influenced the high demand for abortion. In Africa, where access to abortion is legally restricted in several countries, the volume and costs of health care services for treating complications from unsafe abortion has been documented. In addition a review of the health care seeking behavior of women who have been treated for incomplete abortions has helped identify points of intervention for making health care services more accessible and acceptable to women who are seeking options for managing unwanted pregnancy.

Very specifically this report attempts to explore the following:

- Global trends in fertility behavior;

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3 Definition: Women have an unmet need for contraception if they are married, in a consensual union, or never-married and sexually active; are able to conceive; do not want to have a child soon or at all; and are not using any method of contraception, either modern or traditional. (AGI 2007)
The roles of contraception and induced abortion in fertility regulation, looking at both the supply and demand aspects;

The costs associated with fertility regulation in two different regions of the world with varying levels of fertility, namely Sub-Saharan Africa and Central Asia.

The impact of fertility regulation on individuals and national health systems; and finally

Policy implications and associated recommendations for improving access to and information about family planning and abortion.

The report studies two regions and two countries in each of these regions, representing different patterns of fertility and use of different fertility regulation methods. Fertility rates have declined in most low and middle income countries except for 35 countries (i.e. countries with a TFR greater than 5). Thirty-one of these countries are in Sub-Saharan Africa. The use of modern contraceptive methods is low in these countries and abortion services are legally restricted. On the other end of the spectrum is Eastern and Central Europe with a declining fertility (from 2.5 in 1980 to 1.6 in 2000), moderately high contraceptive use (50%–69%) and high induced abortion rates.

Two countries from these regions, Nigeria and Kazakhstan were studied with the aim of looking at the links between reproductive health policies, service delivery programs, and health care financing, on the one hand, and on the other, fertility regulation choices, childbearing intentions, women’s actual fertility related behaviors and the impact of these behaviors on the health status and well being of women and their families.

The results of this report are expected to influence the World Bank’s lending and policy dialogue in priority countries, especially for policy makers in Ministries of Health, Finance and Economic Development and analysts and policy advisors in the World Bank client countries. The report will also be shared with senior program managers in bilateral and multi-lateral institutions.

1.3. Structure and Summary of the Report

The report begins with a global overview of fertility trends, followed first by a regional overview of the cost of post–abortion care in Africa and then by a country study from Nigeria, presenting the costs of post-abortion care. A chapter on trends in contraception and abortion in Europe and Central Asia comes next, followed by a country study from Kazakhstan on attitudes towards contraceptive use and abortion and cost of services. The final chapter brings together the summaries of results from the different overviews and country reports and the implications for policies and programs.

The global overview chapter highlights the gap between actual fertility and the desired family size, discusses the determinants of fertility, including gender based variables as well as socioeconomic factors such as female education, employment status, urban–rural residence and household poverty. The discussion shows that the desired family size continues to decline, and many countries that are undergoing a rapid demographic
transition, from a state of high fertility to one of low fertility, are unable to meet the growing demand of couples for fertility regulation, leading to unplanned pregnancies and a consequent high unmet need for contraception as well as safe post-abortion services. The latest known trends for unsafe abortions worldwide and the direct and indirect costs associated with this practice are also highlighted in this discussion. The chapter concludes with a reiteration of the well established fact that an increase in access and availability of modern contraceptive methods can reduce maternal and child mortality and morbidity.

Very little population based data is available on abortion practices in Africa, except for small-scale localized studies. An overview of the post-abortion care costs in Africa derived from 28 published studies reveals the paucity of literature on the topic. Moreover, the lack of comparability among the studies limits their usefulness. The majority were carried out at urban tertiary centers and therefore are not representative of all women seeking care for abortion complications. Supply side studies using health care service data indicate that post-abortion care (PAC) is routinely provided in Africa where abortion is legally restricted. The length of hospitalization and cost per patient were the most frequently measured indicators, with a cross country variation in this cost due to differences in protocols among countries on the recommended duration of the stay, even for patients with similar clinical diagnoses. The review made it clear that studies on indirect costs, such as loss of productivity and family income or the long term consequences of morbidity and mortality due to unsafe abortions, are not adequate. There has, however, been some evidence to conclude that MVA (manual vacuum aspiration) is safer health-wise and also more cost effective than the D&C (dilatation and curettage) method. More rigorous, timely and comprehensive research on the cost of post-abortion care and the savings incurred by implementing access to quality services is needed to ensure informed policy making.

The country study from Nigeria on cost of post-abortion care points out that in 2005 an estimated 185,000 women who had undergone induced abortion suffered health complications. The report compares the treatment costs for these women with the costs that would have been incurred had these women been able to use modern contraceptive methods to avoid unwanted pregnancies, and it concludes that the cost of post-abortion treatment would be four times higher than providing contraceptive care.

The overview of contraception and abortion in twelve countries in Central Asia and Eastern Europe shows that in these countries, until the mid 1990s, induced abortions were a major method of birth control. Contraceptive failure and unmet need were cited as the main reasons for seeking abortions in these countries. Traditional methods, which are associated with higher abortion rates, were commonly used for contraceptive purposes. The review has however demonstrated an increase in the use of modern contraceptive methods and a concomitant decline in total abortion rates in this region. The total fertility rates have also declined dramatically in the region during the last twenty years and now stand among the lowest for all regions in the world.
The country study from Kazakhstan examined fertility regulation from the perspective of service providers, assessing their attitudes towards contraception and abortion, to gain insight into the financing of family planning and abortion services and estimate the public financial burden of avoidable abortion services. The study provides an example of how provider biases may negatively affect the services that clients receive. Most providers have limited knowledge of all the contraceptive methods that are available. Therefore they tend to only offer one method of contraception and not a choice of methods. The results also show that it is not the easy access to and affordability of abortion services that led to high abortion rates in Kazakhstan but rather the failure to provide convenient and acceptable choices for family planning. It was concluded that substantial financial savings could be realized by reducing the number of abortions.

1.4. **RECOMMENDATIONS**

The following key recommendations, detailed in the final chapter, have been distilled from this report:

- There is a need for expanded and improved provision of contraceptive information targeted to different audiences such as men, local leaders, women (married and unmarried), youth and adolescents. The information, accompanied by necessary contraceptive services, should help women delay the first birth, achieve healthy spacing of births and avoid unwanted births, as well as counteract myths about modern contraception and promote correct use of traditional spacing methods such as exclusive breastfeeding. The information should also point out the health benefits of correctly practiced contraception, which include averted maternal deaths, averted infant deaths, and depending on the method, averted HIV transmission.

- An overall expansion of the availability of quality contraceptive services is essential, especially given that the high abortion rates are largely attributable to the failure of traditional contraceptive methods. Service delivery systems need to be strengthened to ensure that contraceptives reach the rural poor and those most in need.

- High quality contraceptive commodities are cost effective investments and their greater availability—a wider choice of methods and a reliable supply—would reduce the need for induced abortions. Commodity security transition plans have to be in place, especially within the public sector, to ensure long-term sustainable commodity logistic systems.

- An appropriate mix of contraceptive methods needs to be ensured and/or strengthened. Equally important, health staff must receive training to a) increase their awareness of and knowledge about different methods, and b) strengthen their counseling skills so that they can provide clients with correct information and disabuse them of misconceptions around contraception and abortion services.

- PAC (post-abortion care) should be expanded to include contraceptive services and counseling. Post-abortion contraceptive services and counseling need to be strengthened
and provided in the same facility where the abortion was performed so as to decrease opportunity costs.

- It is critical that young people get knowledge on ways to prevent unwanted pregnancy and information on contraceptive methods and reproductive health services. Information and services should be delivered through youth friendly health services programs and school programs for both in- and out-of-school adolescents.

- The specific needs of HIV positive people have to be addressed by linking family planning services to all HIV/AIDS programs.

- Government, professional associations and other stakeholders should examine existing policies, how payment structures work, and whether there is need to modify the existing system to better meet the needs of the clients.

- There is a need for more research on the costs and consequences of inadequate or unsafe use of fertility regulation to governments, households and individuals, as well as on the benefits of adequate access to high quality means of fertility regulation.
REFERENCES


CHAPTER 2:
GLOBAL TRENDS IN FERTILITY, CONTRACEPTIVE USE AND UNINTENDED PREGNANCIES

Elizabeth Lule, Rifat Hasan and Kanako Yamashita-Allen

2.1. INTRODUCTION

This chapter examines the global trends in fertility declines, determinants of fertility, consequences of unintended pregnancies and related direct and indirect costs.

Fertility levels have been declining steadily over the last three decades with most prominent declines observed between 1985 and 1995; however fertility levels, trends and the pace of decline differ between regions, among countries and within countries (Figure 2.1). Fertility reductions have occurred fastest in Asia and have been slowest in least developed countries, mainly in Sub-Sahara Africa (Figure 2.2). However, significant declines have occurred in the least developed countries as well as in developed countries. For example, in 1970, Bangladesh had some of the worst social indicators and lowest income of all countries, with a total fertility rate (TFR)\(^4\) of about 7 children per woman, and today the TFR is about 3 (World Bank 2007). By the mid 1970s, about 60% of all countries had total fertility of 4.5 births per woman, and by the mid 1990s, 44% of the world’s population lived in countries where total fertility was at or below replacement fertility at 2.1 births per woman. Fertility rates are lowest in Europe, East Asia and Pacific where they are at or below 2.1 children per woman, and they are highest for Sub-Saharan Africa at 5.2 children per woman (World Bank 2003). For Central Asia, Latin America and the Caribbean rates are between 2.5 and 2.6, and in the Middle East, North Africa and South Asia they are between 3.3 and 3.4.

\(^4\) Total fertility rate is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates.
Fertility declines have been slowest in 35 of the least developed countries. Thirty one of these high fertility countries are in the Eastern, Western, and Middle regions in Sub-Saharan Africa (as defined by the UN), and four are countries in other regions (Timor-Leste, Afghanistan, Djibouti, and Yemen) (World Bank 2007). In these countries, fertility has remained above 5 children per woman, and in most of them little change has been observed in recent decades (Figure 2.2). Social and economic indicators are generally poor in all these countries, with low levels of educational attainment, high gender inequalities, high mortality, and high levels of poverty (UN 2004; World Bank 2004). Several of these countries have experienced conflict, making it difficult to deliver basic health and education services.
A number of countries—primarily in the Middle East and North Africa, East Asia and the Pacific, Southern Africa, Latin America and the Caribbean, and South Asia regions—have experienced rapidly declining fertility levels to a TFR of approximately 3 and can be expected to continue to decline in the future. The levels of fertility of the countries in this group vary in terms of the decline’s initiation and pace (Figure 2.3). The decline in fertility in many of the countries is illustrative of expanded contraceptive use resulting from family planning programs. However, overall averages mask large inequities between rural and urban and between rich and poor households. Poor households in many of the countries still have high levels of fertility and unmet need for family planning.
A group of countries in Europe and Central Asia region (ECA) have experienced the fastest fertility reductions, with rates dropping to below 2.5 children per woman (Figure 2.4). Some low-and middle-income countries in other regions (e.g. Myanmar, Sri Lanka, Vietnam, Brazil, and Tunisia) have also recently reached low levels of fertility (World Bank 2007).
2.2. DETERMINANTS OF FERTILITY

Economic development, social change, and technology have been associated with fertility decline, which has also been influenced by politics and government policies. The aforementioned fertility determinants have, in turn, led to a reduction in perceived economic contributions from children, increased opportunity costs of childbearing, family transformations, changing cultural values, improved status of women and labor participation, access to education, marriage delays, urbanization, diffusion of ideas supporting lower fertility and improved access to organized family planning programs and effective fertility regulation (Bulatao 2001).

The determinants of fertility decline (or its absence) have been analyzed extensively in social science research. Most commonly, two different types of determinants of fertility are distinguished: 1) indirect determinants such as social, cultural, and economic variables, which influence decision making regarding the number of children a woman or couple decides to have, and 2) direct or "proximate determinants" such as biological and behavioral variables, through which the socioeconomic variables operate (Bongaarts and Potter 1983). The respective roles of indirect and direct determinants have been recognized since the pioneering work of Kingsley Davis and Judith Blake in the mid-1950s. John Bongaarts identifies eight factors that act as "proximate determinants": proportion married; contraception; induced abortion; lactational infecundability; frequency of intercourse; sterility; spontaneous intrauterine mortality; and duration of the fertile period (Bongaarts 1978). Both sets of determinants are useful for understanding fertility change, as changes in socioeconomic variables affect fertility levels differently, depending on the proximate determinants through which they are expressed (World Bank 2007).

Analysis of DHS data indicates that there is a strong negative correlation between TFRs and women’s education. Women with secondary or higher levels of education have fewer children than women with primary or no education in all regions (Figure 2.5). Education provides knowledge, builds skills for employment, increases female labor force participation, raises the age at marriage, increases exposure to media and information, promotes behavior and belief changes, provides voice and participation in family decision making, and raises the opportunity costs of women’s time. Thus educational attainment—even if only a primary school education—is a good predicator of low fertility. The regions with the widest fertility gap between women with secondary education and those who have no education are South Asia, Sub-Saharan Africa, and Latin America and Caribbean (Cochrane 1979; J.P. Tan and M. Haines 1984; Ainsworth, Beegle et al. 1996; Cleland and Sinding 2005).
Other studies illustrate the importance of employment status (Stakes and Hsieh 1983; Barkat-e-khuda, Roy et al. 2000), urban-rural residence, household poverty (Gwatkin, Rutstein et al. 2004; Gwatkin, Wagstaff et al. 2005), the cost of raising children, the cost of contraception, a woman’s autonomy (ESCAP 1987; Hogan, Berhanu et al. 1999; Hindin 2000), and husbands' occupation (Rutstein 2002).

Cultural factors influence the desired family size that couples intend to achieve, as well as the acceptability of fertility control through contraception and abortion and the accessibility of means and services. If Government policies regulate the availability of contraceptives, this can affect contraceptive use. Government and civil society organizations influence fertility through family planning programs that provide information and contraceptive commodities. Governments, of course, do not always strive to reduce fertility levels. In low fertility countries, they may implement pro-natalist policies such as mandating parental leave or providing subsidies to encourage childbearing (World Bank 2007).

Similar to women’s education, child survival is highly negatively correlated to the total fertility rate. Improvements in child survival generate various distinct but closely interrelated changes in reproductive behavior. A child’s survival will have the “physiological effect” on birth intervals through its impact on breastfeeding. A child’s death has the “replacement effect” with respect to childbearing and birth spacing. Another effect of child survival on reproductive behavior is linked to parents’ perceptions about their children’s survival chances (UN Population Division 2001).

2.2.1. Poverty and Inequality

Poverty and high fertility are often seen as closely related. Studies have shown that the poor are often bypassed by public health sector basic services including education and reproductive health services (Gwatkin, Rutstein et al. 2004; Gwatkin, Wagstaff et al. 2005). Wealth asset quintile data from DHS indicate that the poor have higher TFRs than the rich across countries in all regions. This pattern of high fertility amongst the poor is present in countries of both high and medium fertility (Figure 2.6). A similar pattern is seen in the utilization of family planning services. In all regions, particularly in Sub-
Saharan Africa, South Asia, and Latin America and the Caribbean, the poor have lower contraceptive prevalence rates than the rich (Figure 2.7).

**Figure 2.6. Total Fertility Rate by Region and Wealth Quintile**
(DHS 1995-2005, most recent country data).

Note: Regional TFR averages are unweighted averages of select countries in each region.
Sources: Demographic and Health Surveys

**Figure 2.7. Contraceptive Prevalence Rate (CPR) by Region and Wealth Quintile**
(DHS 1995-2005, most recent country data).

Note: Regional CPR averages are unweighted.
Sources: Demographic and Health Surveys

The inequities in coverage rates of basic maternal and child health services for the poorest and richest quintiles in 56 low and middle income countries is evident in Figure 2.8 (White, Merrick et al. 2006). As is evident in this figure, the largest differentials exist for reproductive health services: a woman in the richest quintile is twice as likely to use modern contraceptives as a poor woman, and the richest women are three times more likely to have an attended delivery (Gwatkin 2002). This pattern was particularly prevalent in South Asia, Central and South America, and Sub-Saharan Africa.
2.2.2. Urban-Rural Divide

A significant difference exists between urban and rural populations with respect to fertility and contraceptive use. For example, changes in fertility rates and contraceptive use in most Sub-Saharan countries in the 1990s have been concentrated in more affluent, urban population segments (World Bank 2004). Analysis of DHS data indicates that, across the countries considered, TFRs are consistently higher and contraceptive prevalence is consistently lower in rural areas (Figure 2.9).

5 Contraceptive prevalence is the percentage of women who are practicing, or whose sexual partners are practicing, any modern method of contraception.
2.3. **Fertility Intentions and Desired Number of Children**

Desired number of children varies by region and country, and Sub-Saharan Africa has larger family size preferences than other regions (Figure 2.10). Like TFR and CPR, fertility preferences are affected by factors such as geography and women’s education. In all regions, families living in rural areas desire larger families. However, even where ideal family size is large, actual family size may exceed desired family size. The gap between the two is largest in Sub-Saharan Africa where TFR is highest and CPR lowest. In Uganda, for example, the gap between the number of children families want and the number of children they actually have increased from 1.3 children in 1995 to 1.6 children in 2000-2001 (Ahmed, 2005). Women’s education is a strong indicator for family size preferences; globally, higher levels of education are associated with a desire to have fewer children.

**Figure 2.10. Desired number of children by region**

![Bar chart showing desired number of children by region.](image)

*Note: Regional averages are unweighted averages of select countries in each region. Source of Data: Demographic and Health Surveys*

Despite the expressed desire for fewer children, women often have more children than their ideal number. DHS data indicates a gap exists between TFR and ideal desired number of children, even in much of Sub-Saharan Africa (Annex 1). Household and societal characteristics explain much of this disparity. The social organization of households and the woman’s position within it affect her ability to make decisions regarding fertility. Couples are likely to have different preferences regarding the number and timing of births, and decisions about children are likely to be based on family status, ideas about preservation of lineage, and respect for ancestors (Makinwa-Adebusoye, 2001). Therefore culture also plays an important role.

Data from DHS indicate that families have gradually desired fewer children. Except in much of Sub-Saharan Africa and a few Asian and Latin American countries (e.g. Pakistan and Guatemala), women throughout the world increasingly want small families (AGI 2001). Although desired family size is highest in Sub-Saharan African, families in
even these countries have expressed a desire to have fewer children. This global downward trend in desired family size implies that the period of exposure to pregnancy has become longer for those preferring no fertility or lower fertility. In early and mid fertility transition stages in developing countries, observed fertility levels typically exceed desired family size mainly because of unwanted fertility, sex preferences and child replacement (Bongaarts 2001). In contrast in low fertility countries or post transitional societies, desired family size exceeds the actual TFRs.

Notwithstanding regional variation, desired number of children is not realized when demand for family planning is not satisfied. Despite dramatic increases in the availability and use of family planning services, unmet need for family planning still remains high in some regions. (UN Millennium Project 2006) When women are not able to implement choices on family formation and when their desire to delay birth, space births, or limit further fertility is not satisfied, unintended pregnancies occur.

2.4. UNINTENDED PREGNANCIES

More than one third of the approximately 205 million pregnancies that occur every year world wide are unintended. Of the 182 million pregnancies each year in developing countries, 76 million are unintended. Women who are not using any method of contraception account for 66% of all unintended pregnancies in developing countries. Another 25 million of unintended pregnancies occur as a result of incorrect or inconsistent use of contraception or method failure (Singh et al. 2003).

Figure 2.11. Unintended pregnancies in developing countries, by women’s contraceptive use

The degree to which a woman has control over whether she has sexual intercourse, whether she uses contraception, how effectively she uses it, and over when and how many children she has is often influenced by her age, religion, culture, social, or economic position in society as well as by her husband or partner and in some cases by other family members. Communication with partners about contraception and agreement on preferred family size are important determinants of effective contraceptive use.

Some newer destabilizing factors are now influencing the control people have over their reproductive choices. AIDS, famine, civil wars, ethnic rivalries, genocide, and rape are renting the fabric of civil society in many parts of the world, contributing to the number of unintended pregnancies. Unplanned pregnancies can and do result from forced sexual intercourse. Rape committed as a tool of war or genocide has gained international attention in recent years (e.g. Sudan, Congo, and Rwanda); however, this war tactic has been documented for decades, as evidenced by crimes committed during Bangladesh’s war of independence in 1971 (Akhter 1988).

Sexual coercion contributes to unintended pregnancy and abortion in normal social contexts as well. Women—especially those who are young, poor, uneducated, or of low social status—are sometimes subjected to forced sexual intercourse (Heise 1995). Women with limited or no economic or social power are often unable to refuse the sexual advances of men who have power over them, including employers, landlords, creditors, men of higher status, or older men. In Africa, young women often trade sexual favors with rich older men for school fees and other expenses. (Mensch et al. 1999)

Unintended pregnancies expose women to additional health risks by increasing the number of lifetime pregnancies and deliveries. An increase in the number of pregnancies and deliveries can raise maternal mortality rates, particularly in countries where women are not able to receive quality health care during pregnancy and childbirth. (Levine et al. 2006)

Many unintended pregnancies at the root of induced abortion could be prevented if the demand for contraception were met and if contraception were used correctly and consistently. It is estimated that 108 million married women in developing countries have an unmet need for contraception. (Sedgh et al. 2007) For example, high abortion rates in Sub-Saharan Africa coexist with high levels of unmet need for contraception. (Westoff 2006) The most common barriers to contraceptive use are: lack of knowledge, health concerns and social disapproval. It is imperative that women receive adequate information and counseling about contraceptive methods in order to make informed choices and avoid future unintended pregnancies. Formulation of an effective strategy for Behavior Change and Communication (BCC) and dissemination of appropriate Information, Education and Communication (IEC) messages will be crucial for demand creation. Sustaining contraceptive use will require, on the supply side, improvements in contraceptive supply chain management, diversification of distribution channels, and the delivery of quality services, including an increased choice of contraceptives.
2.5. **Contraceptive Use and Unmet Need**

Contraceptive use accounts for a substantial portion of the variation in fertility rates. There is a negative correlation between the total fertility rate and contraceptive use, indicating that countries that have achieved a high level of contraceptive prevalence have reached a lower fertility level.

**Figure 2.12. Relationship between the Total Fertility Rate and Contraceptive Prevalence (Modern Methods)**

![Graph showing the relationship between TFR and CPR](image)

\[ R^2 = 0.7256 \]

**Source:** Demographic and Health Surveys.

Focusing on regional differences, contraceptive prevalence among women is the lowest in Sub-Saharan Africa (at CPR of 15.2%) where TFR is the highest at 5.3. The three regions that have achieved a CPR greater than 40%—East Asia, ECA and LAC—have also achieved a low level of fertility (less than 2.5) as illustrated in Figures 2.13 and 2.14.
Figure 2.13. Total Fertility Rate by Region

Note: Regional TFR averages are weighted averages of select countries in each region
Source: World Development Indicators 2007

Figure 2.14. Contraceptive Prevalence Rate by Region

Source: Gwatkin, et al. 2007
Like contraceptive prevalence rates, **unmet need** for contraception also varies by region. Unmet need as a concept dates to the 1960s, when researchers first demonstrated a gap in the developing world between women’s fertility preferences and their use of contraception (Sonfield 2006). The generally used definition is as follows: Women have an unmet need for contraception if they are married, in a consensual union, or never-married and sexually active; are able to conceive; do not want to have a child soon or at all; and are not using any method of contraception, either modern or traditional. Globally, an estimated 137 million women have an unmet need for contraception (Gill, et al. 2007).

According to the 2007 study by the Guttmacher Institute, using DHS from 53 countries (1995-2005), out of the estimated 108 million married women in developing counties that have an unmet need for contraception, 55% live in South and Southeast Asia, while 27% live in Sub-Saharan Africa. (Figure 2.15) While unmet need among married women has declined, the proportion of women with unmet need for contraception remains particularly high in Sub-Saharan Africa where contraceptive use remains low (Figure 2.16).

**Figure 2.15. Unmet Need for Contraception by Region**

![Figure 2.15. Unmet Need for Contraception by Region](image)

Unintended pregnancy combines two aspects of fertility: unwanted and mistimed pregnancies. Contraception can prevent and space pregnancies, and the relationship between unmet need for contraception and unintended pregnancies has been long established. Evidence in the U.S. and internationally suggests that even though contraceptive use is often imperfect, it can reduce unintended pregnancy and abortion (Marston and Cleland 2003). Women who are not using any method and are sexually active, are estimated to have an 85% probability of becoming pregnant in a one-year period; by comparison, modern reversible methods have estimated user failure rates ranging from about 3% (e.g. injectables such as Depo-Provera) to 15% (condoms), and traditional methods have higher failure rates (20%–28%) but still provide significant protection relative to not using a method at all (Hatcher et al. 2004). Findings from a study in Kazakhstan indicate that declines in national abortion rates may have resulted partially from fewer unintended pregnancies due to greater contraceptive use and net use of more effective methods (Westoff 2000).

Public-sector programs and private spending in the developing world are meeting the needs of more than 500 million women for a modern contraceptive method (Singh et al 2003). These family planning services and supplies currently prevent 187 million unintended pregnancies each year, including 60 million unplanned births and 105 million abortions. This has measurable health benefits, including 2.7 million fewer infant deaths and 215,000 fewer pregnancy-related deaths. Although the expansion and improvement of family planning...
services can help reduce unintended pregnancies and induced abortions, these services are frequently unable to meet the demand, are inaccessible or unaffordable, or are unavailable due to a range of social barriers. Evidence suggests that many married women in developing countries do not have access to the contraceptive methods they would prefer to use in order to space pregnancies or limit family size (Westoff and Ochoa 1991; Westoff and Bankole 1995). The options are even more limited for unmarried women and adolescents, who rarely have access to reproductive health information and counseling and are often excluded from contraceptive services.

Adolescents indicate an unmet need for contraception that is more than twice as high as that of the general population (World Bank 2007). More than one in ten unmarried women have an unmet need in many Sub-Saharan countries (Sedgh et al. 2007). Most common reasons for unmet need include: lack of information and access to services; fear of side effects and health concerns; religious belief; fear of social disapproval; opposition from spouses and family members, while affordability and cost may be an issue for the poor.

A strong desire to regulate fertility combined with lack of access to effective contraceptives results in a large number of unintended pregnancies. Many countries undergoing a rapid demographic transition—a state of high fertility to one of low fertility—are unable to meet the growing demand of couples for fertility regulation, leading to high numbers of unplanned pregnancies and unsafe abortions in many developing countries. The use of less effective and ineffective methods such as traditional family planning and method failure further increase the risk of unplanned pregnancies and subsequent abortions.

2.6. ABORTION

2.6.1. Global Trends

More than one-third of the pregnancies that occur each year worldwide (approximately 205 million) are unintended, and one in five pregnancies end in induced abortion. An estimated 42 million women worldwide had induced abortions in 2003 compared with 46 million in 1995. Global abortion rates (number of abortions per 1,000 women of childbearing age 15–44) have declined modestly from 35 in 1995 to 29 in 2003. Although there was a substantial decline in the total number of abortion in developed countries (from 10 million in 1995 to 6.6 million in 2003), there was only a slight decline in the number of abortion in developing countries (from 35.5 million in 1995 to 35.0 million in 2003). While 84% of abortions take place in developing countries, the abortion rates are similar in developed and developing countries (26 and 29 per 1,000 women aged 15–44, respectively) for 2003 (Sedgh et al. 2007).
Figure 2.17. Pregnancies Worldwide (205 million)

- **Induced abortions**
- **Unwanted or mistimed births**
- **Wanted births**
- **Spontaneous abortions**


Focusing on regional trends, 62% of the 42 million abortions take place in Asia, followed by 14% in Africa and 10% respectively in Europe and Latin America & Caribbean. While abortion rates declined in all regions, the sharpest decline occurred in Eastern Europe where the rate fell from 90 in 1995 to 44 in 2003. This is attributed to policy changes and improved access to contraceptive information and supplies, simultaneous with increasing costs for abortion in many settings. The abortion rate (12 per 1,000 women aged 15–44) is lowest in Western Europe where abortion is legal and widely available but contraceptive prevalence is also high. By contrast, the abortion rates are higher in Africa and Latin America & Caribbean (29 and 31 per 1,000 women aged 15–44) where abortion laws are more restrictive and unmet need for contraception is high. (Sedgh et al. 2007)

### 2.6.2. Unsafe abortion

Unsafe abortion is defined by WHO as any procedure to terminate an unintended pregnancy done either by people lacking the necessary skills or in an environment that does not conform to minimum medical standards, or both (WHO 1992). The mortality and morbidities associated with unsafe abortion are dependent on the facilities and the

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6 Regions are defined according to UN classification.
skill of the service provider, the method and technologies used, the general health of the
woman, and the stage of the pregnancy.

Although the overall abortion rate has declined worldwide, the proportion of all abortions
that are unsafe has increased from 44% to 48% between 1995 and 2003 (Sedgh et al.
2007). Worldwide between 19- 20 million unsafe abortions occur every year, which is
almost a half of all induced abortions (Åhman and Shah 2007). An estimated five million
women are hospitalized for treatment of abortion-related complications, such as
hemorrhage and sepsis, each year (Singh 2006). Millions others are unable to access
treatment for serious complications from unsafe abortions. The risks linked to induced
abortions also depend on the availability of facilities for the management and treatment
of complications. In some countries, half of all obstetric admissions are for
complications of unsafe abortion (WHO 2004; Madebo and Tsadic 1993; Lema and
Mpanga 2000; CREPHA 2000; Agence France-Presse 2001). While nearly all abortions
(92%) in developed countries are safe, more than half (55%) of abortions in developing
countries are unsafe. Overall, the majority of unsafe abortions (97%) occur in developing
countries (Sedgh et al. 2007).

Women aged 15 to 19 account for at least one-fourth of the unsafe abortions performed
each year. In Sub-Saharan Africa, almost 60% of women who have unsafe abortions are
between the ages of 15 and 24. In Latin America and the Caribbean, young women make
up about 40% of those who have unsafe abortions (World Bank 2007).

Abortion is likely to be safe in countries where abortion is legally permitted, although
unsafe abortions still take place in some of these countries because of poor information,
access and quality of services. Proportions of unsafe abortion are higher in regions where
abortion laws are more restrictive and unmet need for contraception is high: 12 % of
abortions in Europe, 38% of abortions in Asia, 94% of abortions in Latin America &
Caribbean, 98% in Africa were reported to be unsafe in 2003. (Sedgh et al. 2007) If
abortions are performed under sanitary conditions by skilled providers using correct
techniques, it is a safe procedure. In the U.S., the death rate from abortion is only 0.6 per
100,000 procedures.

2.6.3. Consequences of Unsafe Abortion

Unsafe abortion is a significant contributor to maternal morbidity and mortality,
especially in developing countries. At least 67,000 women die from complications of
unsafe abortion each year (Åhman and Shah 2007). Approximately 220,000 children lose
their mothers each year from abortion-related deaths (Singh et al. 2003). The risk of
death in developing countries is an estimated 1 in 270 unsafe abortion procedures.
Unsafe abortion accounts for 13% of maternal deaths worldwide, while 12% of
pregnancy-related deaths are related to complications arising from unsafe abortion in
Sub-Saharan Africa (WHO 2004). See Annex 3. About one in eight of all pregnancies-
related deaths are attributed to unsafe abortion. Unsafe abortion is responsible for the
loss of about 5 million years of productive life, or 14% of all disability-adjusted life years
(DALYs) lost from pregnancy-related complications (WHO 2002).
As shown in Table 2.1., unintended pregnancies and unsafe abortions are responsible for between 12% and 30% of the maternal burden of disease estimated as disability-adjusted life year (Levine et al. 2006). However, this is an underestimate of the present and future burden of disease that can be prevented through investments in family planning and prevention of unsafe abortions. These estimates take into account only the direct health benefits of family planning for women by preventing unwanted births, decreasing the number of abortions, and increasing the length of birth intervals.

Table 2.1. Maternal Burden of Disease Associated with Unwanted Fertility and Unsafe Abortions

<table>
<thead>
<tr>
<th>Region</th>
<th>Deaths</th>
<th>Years of life lost</th>
<th>Years lived with disability</th>
<th>Disability-adjusted life years (DALYs)</th>
<th>Percentage of all maternal DALYs</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia and the Pacific</td>
<td>3,637</td>
<td>107,795</td>
<td>380,255</td>
<td>420,030</td>
<td>17%</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>6,323</td>
<td>190,544</td>
<td>298,390</td>
<td>429,399</td>
<td>30%</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>8,428</td>
<td>244,461</td>
<td>256,742</td>
<td>395,368</td>
<td>12%</td>
</tr>
<tr>
<td>South Asia</td>
<td>30,074</td>
<td>878,028</td>
<td>1,079,661</td>
<td>1,669,727</td>
<td>20%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>43,077</td>
<td>1,270,598</td>
<td>764,012</td>
<td>1,821,721</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Levine et al. 2006

Note: Because of data limitations, estimates are not available for Eastern Europe and Central Asia. Burden-of-disease estimates include a 3% discount rate without age weighting. WHO regions are not identical to the World Bank Regions used here; however, a very close approximation was made by excluding WHO regions AMRO A, WPRO A, and EURO A. These estimates assume that 90% of abortion-related disease burden is preventable by family planning and that the percentage of other preventable maternal disease is equal to the percentage of all births that are unwanted.

The highest number of estimated deaths caused by unsafe abortion is in Africa where abortion is restricted by law: 650 deaths per 100,000 procedures occur in Africa, compared with fewer than 10 per 100,000 procedures in developed countries (Åhman and Shah 2007). In South Africa, where a more liberal abortion law went into effect in 1997, the incidence of infection from abortion decreased by 52%, and the maternal mortality rate declined by 91%. (Jewkes et al. 2005). The proportion of maternal deaths due to unsafe abortion is relatively complex to interpret. In countries where maternal mortality is relatively low and other causes of maternal deaths have already been substantially reduced, a small number of deaths due to unsafe abortion may account for a significant proportion of maternal deaths. Eastern Europe and some countries in Latin America are examples of this complexity as they have high unsafe abortion mortality ratio although the actual numbers of maternal deaths are relatively small (WHO 2004).

2.6.4. Costs of Unsafe Abortion

The costs of unsafe abortion are enormous, especially in developing countries, and include direct and indirect costs to the individual woman, the woman’s household, the country’s health system and society as a whole. Direct costs include hospitalization for treatment of abortion-related complications including costs for health providers, equipment, supplies and drugs. There are costs incurred for the individual woman such as transportation to the health facility and out-of-pocket expenses for treatment and
medication. Indirect costs include loss of income and productivity resulting from long
term morbidities and mortality and other opportunity costs.

While several hospital and health facility-based studies have been conducted to estimate
direct costs, indirect costs are much more difficult to estimate due to a lack of data,
especially in countries where abortion is illegal. The different methodologies used by
researchers to estimate cost make it difficult to generalize results. Preliminary data from
modeling studies estimate a mean per patient cost for post abortion care to be between
US$96 and US$131 (Vlassoff 2006). At the national level, a study in Nigeria estimated
total national direct costs of providing treatment for abortion complications at US$11.7
million (Adewole 2002).

Cost to Women’s Health

Each year, millions of women who resort to unsafe methods die from complications. In
addition to costs related to mortality, the costs of morbidity resulting from unsafe
abortions are also high. Survivors of unsafe abortions experience side effects, and unsafe
abortion causes disability in an additional 5 million women (WHO 2002). The methods
used that pose the greatest threat to women undergoing an abortion include penetration
by sharp objects (which can perforate the uterus), the insertion of contaminated materials
into the cervix, and the use of unclean instruments (AGI 1999). Complications include
hemorrhage, sepsis, peritonitis and trauma to abdominal organs. Thus, these women run
the risk of severe long term health problems such as reproductive tract infection,
infertility, chronic pain, digestive disorder, damaged organs as well as the risk of ectopic
pregnancy.

Social and Psychological Cost

In addition, unsafe abortion also has social and psychological costs associated with it
which are more difficult to quantify in monetary terms and which have typically not been
measured. The stigma associated with abortion in many parts of the world can be
significant, especially to adolescents and unmarried women. Social and psychological
costs include: the mental health of the woman who has undergone treatment for unsafe
abortion, the stigma faced by the woman from the family and community as a result of
obtaining a clandestine abortion, incapacity to participate in daily household activities
and the inability to care for children who, moreover, are at increased risk of being
orphaned. Infertility, a possible sequela of unsafe abortion, can also be psychologically
traumatizing, stigmatizing a woman socially for the rest of her life.

Cost to Health Systems

The health care system also bears significant financial costs for treating complications
resulting from unsafe abortions. In many African countries, a high proportion (15%–
30%) of hospital gynecological admissions result from complications of unsafe induced
abortion (UNFPA 2004; Benson et al. 2004). The annual hospitalization rate for
treatment of abortion complications varies from 3 per 1000 women (aged 15-44 years) in Bangladesh to 5-6 per 1000 in Mexico, Nigeria and Philippines, to about 15 per 1000 in Egypt and Uganda (Singh 2006).

Treatment for abortion-related complications consumes a large portion of hospital budgets for obstetrics and gynecology and in some cases almost 50% of department budgets (Konje 1992; Lema et al. 1997; Lane et al. 1998). Costs are much higher depending on type of practitioner used, with physicians costing more to a health system than middle level providers. Income and residence appear to influence women’s choice of an abortion practitioner (AGI 1999). Surveys in Nigeria, South and Southeast Asia, and Latin America show that wealthier women living in urban areas primarily go to physicians while poor women in rural areas primarily go to traditional practitioners or induce their own abortions (Makinwa-Adebusoye 1997; Singh 1997).

Given already strained resources in developing countries, the high costs of treating abortion complications have significant implications. Because complications to abortion are preventable and cost effective interventions exist, these costs include the unnecessary diversion of financial and human resources.

**Cost-Effectiveness of Family Planning Services**

The cost effectiveness of family planning services to prevent unintended pregnancies and reduce the risks of unsafe abortion is well-documented. Cost-effectiveness analysis is typically based on direct health benefits and excludes broader socio-economic benefits. A number of studies have estimated effectiveness, measuring births averted, total or unwanted pregnancies averted, unsafe abortions averted, maternal and child deaths averted, and measures of health utility, such as the disability-adjusted life year (DALY). Table 2.2 showing average costs per benefit of family planning, compiled from country level-data from 68 developing countries, demonstrates that costs and benefits vary between regions.

**Table 2.2. Average Costs per Benefit of Family Planning (2001 USD)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Births averted</th>
<th>Infant deaths averted</th>
<th>Maternal deaths averted</th>
<th>Disability-adjusted life years (DALYs) gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia and the Pacific</td>
<td>$163</td>
<td>$4,907</td>
<td>$12,880</td>
<td>$60</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>$87</td>
<td>$2,316</td>
<td>$34,564</td>
<td>$53</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>$97</td>
<td>$1,989</td>
<td>$18,917</td>
<td>$49</td>
</tr>
<tr>
<td>South Asia</td>
<td>$113</td>
<td>$1,577</td>
<td>$5,172</td>
<td>$30</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>$131</td>
<td>$1,367</td>
<td>$10,231</td>
<td>$34</td>
</tr>
</tbody>
</table>

*Source:* Levine et al. 2006  
*Note:* The model used country-level data for 68 developing countries. Output costs were based on Population Action International estimates in 1994 of the public sector cost per user. Estimates are not available for Eastern Europe and Central Asia.
DHS surveys indicated that price has impeded the use of contraceptives for fewer than 2% of women with unmet need. Several studies suggest that even the poorest urban users are typically willing to pay commercial contraceptive prices in order to limit or space births, a finding that illustrates that the economic costs of childbearing dwarf those of contraception (Pritchett 1994).

In addition, delivering contraceptive services with abortion or post-abortion care can be cost-effective. Currently, few clinics and hospitals treating women with abortion complications offer contraceptive counseling and services as part of their post-abortion care. Similarly, about one-third of all unmet need is among women post-partum (Ross and Winfrey 2001), and greater integration of maternal and child health services with family planning services (e.g. during prenatal visits, delivery care, and postpartum visits) could satisfy a greater need.

A cost effectiveness analysis study in Mexico has shown that increasing the provision of family planning, preventing unintended pregnancies, providing basic health services that include access to safe abortion and emergency obstetric care would reduce maternal mortality at the national level by 75% with an incremental cost effectiveness ratio of US$300 per DALY (Hu 2007). In the long term, countries need a dual strategy that reduces both unmet need and the risks of unsafe abortion.

2.7. CONCLUSION

Fertility levels have declined steadily over the last three decades but the pace of decline varies among regions. Countries that have achieved a high level of contraceptive use have reached a lower fertility level. Because of lack of access to information and family planning services, unmet need for contraception remains high but varies across regions, among countries and within countries. About 15% of married women and 7% of never-married women have an unmet need for contraception, and the demand for contraception is increasing (Sedgh et al. 2007). A gap continues to exist between actual and desired family size, resulting in unintended pregnancies. More than one-third of the pregnancies that occur are unintended and one in five pregnancies ends in induced abortion. Almost half of all induced abortions are unsafe, and the proportion of all abortions that are unsafe has increased during the last decade. Sixty-six percent of unintended pregnancies occur among women who are not using any method of contraception. Access and availability of high-quality contraceptive information and services that ensure use of effective contraception would prevent many unintended pregnancies and reduce induced abortions. If contraception were provided to the 137 million women who lack access, maternal mortality would decline by 25%–35%. Countries that have undergone the fertility transitions will need to increase investments in contraception to meet the growing demand among their large adolescent cohorts as well as demand due to shrinking desired family sizes. Investing in family planning programs is not only a cost-effective way to reduce unmet need and reduce the risks of unsafe abortions but can also yield other health and economic benefits, thereby accelerating the achievement of the millennium development goals, particularly number five, which is improved maternal health.
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Westoff, CF. 2000. The Substitution of Contraception for Abortion in Kazakhstan in the 1990s. Calverton MD: Macro International Inc. (Demographic Health Surveys Analytical Studies, No. 1)


### ANNEX 1. TOTAL FERTILITY RATE (15–49) AND IDEAL NUMBER OF CHILDREN DESIRED IN SELECTED COUNTRIES: MOST RECENT DHS

<table>
<thead>
<tr>
<th>Sub-Saharan Africa</th>
<th>Total Fertility Rate 15-49</th>
<th>Mean Ideal Number of Children (women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin 2001</td>
<td>5.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Botswana 1988</td>
<td>4.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Burkina Faso 2003</td>
<td>5.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Burundi 1987</td>
<td>6.9</td>
<td>5.3</td>
</tr>
<tr>
<td>Ethiopia 2000</td>
<td>5.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Ghana 2003</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Kenya 2003</td>
<td>4.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Liberia 1986</td>
<td>6.7</td>
<td>6.0</td>
</tr>
<tr>
<td>Madagascar 2003/2004</td>
<td>5.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Malawi 2000</td>
<td>6.3</td>
<td>4.2</td>
</tr>
<tr>
<td>Mali 2001</td>
<td>6.8</td>
<td>6.2</td>
</tr>
<tr>
<td>Mozambique 2003</td>
<td>5.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Namibia 2000</td>
<td>4.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Rwanda 2000</td>
<td>5.8</td>
<td>4.9</td>
</tr>
<tr>
<td>Senegal 1997</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>South Africa 1998</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Tanzania 2004</td>
<td>5.7</td>
<td>5.0</td>
</tr>
<tr>
<td>Togo 1998</td>
<td>5.2</td>
<td>4.5</td>
</tr>
<tr>
<td>Uganda 2000/01</td>
<td>6.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Zambia 2001/02 (1)</td>
<td>5.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Zimbabwe 1999</td>
<td>4.0</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Central Asia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kazakhstan 1999</td>
<td>2.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Kyrgyz Republic 1997</td>
<td>3.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Turkmenistan 2000</td>
<td>2.9</td>
<td>3.3</td>
</tr>
<tr>
<td>Uzbekistan 1996</td>
<td>3.3</td>
<td>3.6</td>
</tr>
</tbody>
</table>
## Annex 2. Age of Sexual Initiation among Women Age 20-24 in Selected Countries: Most Recent DHS

<table>
<thead>
<tr>
<th>Sub-Saharan Africa</th>
<th>Age at first sexual intercourse (women age 20-24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin 2001</td>
<td>17.2</td>
</tr>
<tr>
<td>Botswana 1988</td>
<td>17.4</td>
</tr>
<tr>
<td>Burkina Faso 2003</td>
<td>17.5</td>
</tr>
<tr>
<td>Cameroon 2004</td>
<td>16.7</td>
</tr>
<tr>
<td>CAR 1994/95</td>
<td>16.0</td>
</tr>
<tr>
<td>Chad 2004</td>
<td>15.9</td>
</tr>
<tr>
<td>Cote d'Ivoire 1998/99</td>
<td>16.2</td>
</tr>
<tr>
<td>Eritrea 2002</td>
<td>18.3</td>
</tr>
<tr>
<td>Ethiopia 2000</td>
<td>18.1</td>
</tr>
<tr>
<td>Gabon 2000</td>
<td>16.2</td>
</tr>
<tr>
<td>Ghana 2003</td>
<td>18.4</td>
</tr>
<tr>
<td>Guinea 1999</td>
<td>16.0</td>
</tr>
<tr>
<td>Kenya 2003</td>
<td>18.1</td>
</tr>
<tr>
<td>Liberia 1986</td>
<td>15.5</td>
</tr>
<tr>
<td>Madagascar 2003/2004</td>
<td>17.3</td>
</tr>
<tr>
<td>Malawi 2000</td>
<td>17.1</td>
</tr>
<tr>
<td>Mali 2001</td>
<td>15.9</td>
</tr>
<tr>
<td>Mozambique 2003</td>
<td>16.0</td>
</tr>
<tr>
<td>Namibia 2000</td>
<td>18.2</td>
</tr>
<tr>
<td>Nigeria 2003</td>
<td>17.6</td>
</tr>
<tr>
<td>Rwanda 2000</td>
<td>20.0</td>
</tr>
<tr>
<td>Senegal 1997</td>
<td>19.3</td>
</tr>
<tr>
<td>South Africa 1998</td>
<td>17.8</td>
</tr>
<tr>
<td>Tanzania 2004</td>
<td>17.1</td>
</tr>
<tr>
<td>Togo 1998</td>
<td>17.2</td>
</tr>
<tr>
<td>Uganda 2000/01</td>
<td>16.7</td>
</tr>
<tr>
<td>Zambia 2001/02 (1)</td>
<td>17.0</td>
</tr>
<tr>
<td>Zimbabwe 1999</td>
<td>18.9</td>
</tr>
<tr>
<td><strong>Central Asia</strong></td>
<td></td>
</tr>
<tr>
<td>Kazakhstan 1999</td>
<td>20.0</td>
</tr>
<tr>
<td>Kyrgyz Republic 1997</td>
<td>19.5</td>
</tr>
<tr>
<td>Uzbekistan 1996</td>
<td>19.7</td>
</tr>
</tbody>
</table>
### Annex 3. Contraceptive Prevalence Rate, and Maternal Mortality Ratio, and Unsafe-Abortion-Related Proportion of Maternal Deaths by UN Regions and Sub-regions

<table>
<thead>
<tr>
<th>Region/Subregion</th>
<th>Contraceptive prevalence rate (modern methods), 2005(^1) (%)</th>
<th>Maternal mortality ratio, 2000 (per 100,000 live births)(^2)</th>
<th>Estimated Mortality due to unsafe abortion (percent of all maternal deaths)(^3) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Africa</td>
<td>17.3</td>
<td>1020</td>
<td>14</td>
</tr>
<tr>
<td>Middle Africa</td>
<td>5.6</td>
<td>1058</td>
<td>10</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>45.0</td>
<td>250</td>
<td>6</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>51.5</td>
<td>244</td>
<td>11</td>
</tr>
<tr>
<td>Western Africa</td>
<td>8.4</td>
<td>889</td>
<td>10</td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Asia</td>
<td>80.7</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>South-central Asia</td>
<td>41.7</td>
<td>535</td>
<td>14</td>
</tr>
<tr>
<td>South-easter Asia</td>
<td>51.1</td>
<td>197</td>
<td>19</td>
</tr>
<tr>
<td>Western Asia</td>
<td>28.3</td>
<td>201</td>
<td>6</td>
</tr>
<tr>
<td>Latin America</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Caribbean</td>
<td>57.3</td>
<td>386</td>
<td>13</td>
</tr>
<tr>
<td>Central America</td>
<td>57.6</td>
<td>177</td>
<td>11</td>
</tr>
<tr>
<td>South America</td>
<td>65.5</td>
<td>198</td>
<td>19</td>
</tr>
<tr>
<td>Northern America</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>36.0</td>
<td>46</td>
<td>26</td>
</tr>
<tr>
<td>Northern Europe</td>
<td>74.5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Southern Europe</td>
<td>48.9</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Western Europe</td>
<td>70.2</td>
<td>12</td>
<td>•</td>
</tr>
</tbody>
</table>

* Japan, Australia and New Zealand have been excluded from the regional estimates
• No estimates are shown for regions where the incidence is negligible
1 Data source: UNDP, 2005, World Contraceptives 2005
CHAPTER 3:
A REVIEW OF THE EVIDENCE ON THE COST OF POST-ABORTION CARE IN AFRICA

Vanessa Woog, Susheela Singh and Akinrinola Bankole

3.1. INTRODUCTION

Unsafe abortion is a leading cause of maternal morbidity and mortality in developing countries. Unsafe abortions are those that are provided by untrained persons or in unhygienic or clandestine conditions (Åhman and Shah 2007). The health complications that result from unsafe abortion are often severe and require medical care and hospitalization, resulting in substantial costs to national health care systems and to women and their families.

The World Health Organization (WHO) estimates that there are 5.5 million unsafe abortions occurring annually in Africa. As the large majority of the region’s population lives in countries where abortion is prohibited altogether or legal only under narrow criteria, most abortions in this region are occurring under unsafe conditions. The impact of the cost of post-abortion care on countries' public health systems is therefore likely to be large. Researchers and policymakers have been aware of the public health burden of unsafe abortion for some time, and some studies have been carried out over recent decades. This chapter provides an overview of the available evidence on the economic cost of post-abortion care in Africa.

3.1.1. Unsafe Abortion and its Consequences

The rate of unsafe abortion in Africa in 2003 was estimated to be 29 abortions per 1000 women age 15-44 and 17 abortions for every 100 live births (Åhman and Shah 2007). The incidence of unsafe abortion varies somewhat across sub-regions and is noticeably higher in East Africa than in other regions (See Figure 3.1). The rate of all abortions in Southern Africa would be somewhat higher than 18 for every 100 live births, when safe and legal abortions are included. A number of factors contribute to these variations. For example, young women want to delay marriage and the birth of their first child in order to advance their education, and couples increasingly want smaller families as countries become more urbanized, educated and modernized, but effective contraceptive use may not keep pace with these changes.

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7 Vanessa Woog was Research Associate at the Guttmacher Institute at the time this chapter was written; Susheela Singh is Vice President for Research, the Guttmacher Institute, and Akinrinola Bankole is Director of International Research, Guttmacher Institute.
In regard to deaths resulting from unsafe abortion, Africa is experiencing the highest levels compared to other world regions: About 36,000 women die from unsafe abortion each year in Africa, representing slightly over 14% of all maternal deaths in Africa and 54% of all maternal deaths due to unsafe abortion worldwide. This is a ratio of 650 women per every 100,000 abortions in Africa, more than twice the level in Asia and thirteen times the level in Latin America (See Figure 3.2). With 820–880 deaths per 100,000 abortions, Middle Africa and West Africa are the hardest hit by the fatality of unsafe abortion. North Africa and Southern Africa are the least affected with each recording 130 deaths per 100,000 abortions (Åhman and Shah 2007).
Unsafe abortion is also associated with considerable morbidity in Africa: thousands of women are hospitalized each year—an estimated 183,000 in Nigeria in 1996 and 85,000 in Uganda in 2003 (Henshaw et al. 1998; Singh et al. 2005). The annual abortion hospitalization rate in Uganda is 15 per 1,000 women ages 15-49, and in Nigeria in 1996 this rate was 6 per 1,000. In addition, we know very little about women who have abortion complications and do not obtain medical care. They are estimated by health professionals to be a very large group—about one in 4 women who obtain abortions.

The impact of unsafe abortion can also be seen in terms of the financial costs incurred by the woman and her family. These costs include, for example, treatment for post-abortion care (PAC), transportation to the health facility, cost of additional medications once the woman has left the health facility, and loss of income and productivity (both by the woman and other family members). The health care system also bears significant financial costs for treating complications resulting from unsafe abortions. In many African countries, a high proportion of hospital gynecological admissions result from complications of unsafe induced abortion (UNFPA 2004; Benson et al. 1996). As a result, health systems incur significant expenses in treating abortion complications, and treatment for abortion-related complications consumes a large portion of departmental budgets (Konje et al. 1992; Lema et al. 1997; Lane et al. 1998).

Aside from the economic and health costs associated with unsafe abortion, there are a number of social and psychological consequences which are more difficult to quantify in monetary terms and which typically have not been measured. These can include adverse
effects on the mental health of the woman who has undergone treatment for unsafe abortion, the stigma faced by the woman from her family and community as a result of obtaining a clandestine abortion, and the woman’s incapacity to participate in daily household activities and care for children. Infertility, a possible consequence of unsafe abortion, can result in psychological trauma and social stigma with which a woman may live for the rest of her life (Grimes et al. 2006).

Given the extreme poverty and strained resources in Africa, the high costs of treating abortion complications significantly drain financial and human resources and diminish the capacity of the health care system while simultaneously impeding improvement in other sectors. Efforts to assess the magnitude of the costs of providing PAC in this region are therefore crucial. Yet there is little empirical evidence on this subject in Africa.

### 3.1.2. The Context of Unsafe Abortion

Social and economic conditions are changing in the region, although there is great variation across countries. Significant change has occurred over recent decades in some respects—particularly increased urbanization, rising levels of education, and growing access to mass media. These changes are likely to modify attitudes toward desired family size and the need for contraception.

For example, higher levels of education give women the possibility of working in modern sector jobs. Better education also changes men's and women's attitudes to family size, causing them to want fewer children, as it raises their expectations about the quality and quantity of education they want to provide them. Longer schooling for young women is associated with reduced rates of early marriage and increased exposure to sexual intercourse before marriage, leading to a higher likelihood of out-of-wedlock pregnancy. Urbanization makes possible and often compels women’s greater participation in the paid labor force, which can improve their status within the family. Women who earn an income often feel more empowered to make their own decisions about when to marry and when to have children. Modernization, particularly the increasing access to television and radio, may generate new aspirations. For example, women may strive to achieve a better standard of living and greater gender equity, both of which can lead to wanting more control over the timing of births and number of children they have. In more urban areas, it is also no longer necessary to have many children to help with farm work. These changes are happening much faster in some parts of the region than in others.

As women become more educated and as countries continue to modernize—two trends that foster a desire for smaller families—levels of unintended pregnancy may actually rise if the increasing desire for fewer children is not matched by increased contraceptive use. The rate of induced abortion to end unwanted pregnancies may also increase. Where the laws against induced abortion are restrictive, more women may resort to unsafe procedures and suffer adverse health consequences, further escalating the economic costs of unsafe abortion.

In Africa, particularly in the Sub-Saharan countries, many women are sexually active and do not want to become pregnant but are not using any form of family planning. As indicated
in Chapter 2, unmet need for any method is highest in Africa compared to the other regions of the developing world. Furthermore, while the levels of unmet need have declined by at least 5 percentage points between the early 1990s and early 2000s in other regions, there seems to be little change (only 3 percentage points of difference) in Sub-Saharan Africa.

3.1.3. Goals and Objectives of this Chapter

In this chapter we review existing research to synthesize what is known about the costs of PAC in the region as a whole, highlighting gaps in the evidence base. We specifically focus on the economic costs of PAC. Although other costs of unsafe abortion such as the social and psychological costs are critical, they have been excluded from our analysis. Articles on the social and psychological costs of unsafe abortion represents only a small fraction of the literature as so little research has been done on this topic.

No published review focusing specifically on the economic costs of PAC in Africa currently exists. A review of 21 operations research studies in Africa (7 in Kenya) and Latin America by King et al. (1997) has relevant information that we incorporate, including comparisons of the cost of Manual Vacuum Aspiration (MVA) to other methods (King et al. 1997). Other literature reviews are broader in scope and cover the topic of abortion more generally or address the subject of safe motherhood or reproductive health interventions and include a subsection on the cost of PAC (Benson et al. 1996; Dayaratna et al. 2000; Guillaume et al. 2004; Jowett, 2000; Kinoti et al. 1995; Mumford et al. 1998; Population Council 1998). We include in this chapter any studies cited in these literature reviews that focus on the cost of unsafe abortion, and we draw upon any relevant findings.

The goal of this chapter is to synthesize key findings from existing published studies on the economic costs of PAC in Africa. We hope that this synthesis will help identify the type of research needed to be able to document the costs of PAC more systematically and comprehensively. We also hope that this review will aid the development of standardized approaches and measures so that results may be more easily compared and thus better inform policy makers and program planners.

3.2. Methodology and Sources

A comprehensive review of published studies on the costs of PAC in Africa was conducted. Searches in electronic databases up to the beginning of 2005 were made in Popline and Medline (keywords used were: “postabortion care” & “Africa”; “abortion” & “cost” & “Africa”). A number of websites from reproductive health organizations were searched, including the CDC, Engenderhealth, FHI, ICRW, Ipas, IPPF, JHPIEGO, Pathfinder, Population Council, UNFPA, WHO and the World Bank. Other key documents and resources used were an Ipas list of references on the cost of post-abortion care and a CD Rom by CEPED which compiled literature on abortion in Africa from the 1990s to 2004. The reference list of articles and reports selected for review was systematically checked for additional studies that had not been found in the electronic
searches. However, although there is a gray literature on the topic of the cost of PAC, this review did not have sufficient resources to cover studies that are not indexed.

A total of 28 studies are reviewed in this chapter: eight studies compare the cost of MVA to other procedures for the treatment of abortion complications; ten studies provide estimates of individual, hospital and/or national costs of PAC; eight are literature reviews; and two papers detail methodologies to calculate costs. The countries appearing in one or more of the studies on PAC costs are: Burkina Faso, Egypt, Ghana, Kenya, Malawi, Mozambique, Nigeria, Senegal, South Africa, Tanzania and Uganda.

Summaries of 16 studies, eight on PAC costing and eight on MVA costing, are presented in Tables 3.1 and 3.2, providing information on year of data collection, country in which the study was done, sample size (when available), methodology used and main outcomes measured. However, two studies on PAC costing were not summarized in the tables. We were not able to locate one study and only had its abstract (Machungo et al. 1997), and another study did not provide enough detailed information to warrant inclusion (Cobb et al. 2001). Tables 3.1 and 3.2 show results of the different measured outcomes: duration of hospital stay, national cost, cost to hospital, cost per patient, overhead costs, staff costs, and cost of supplies. Waiting time, procedure time and staff time, according to different types of evacuation procedures assessed in the MVA costing studies, are presented in Table 3.3.

Not all studies provide data for the outcomes that they measured, and we only provide results directly related to costs. In presenting and discussing findings, we use comparable measures as far as possible. For the more straightforward indicators such as length of hospital stay, data are relatively comparable across studies. However, cost estimates are calculated in different ways across studies, affecting the comparisons that can be made. Differences in which components are included or excluded are provided whenever available, and these differences are taken into consideration in commenting on the findings from these studies. However, not all studies provide sufficiently detailed information on how costs are calculated and what is included or excluded. It is also important to note that PAC includes treatment of complications resulting from spontaneous abortion (miscarriage) as well as from induced abortion. Some of these studies did not distinguish between these two types of PAC cases. It is known, however, that spontaneous abortions typically present less severe complications than induced abortions performed unsafely, and on average, it costs much more to treat complications resulting from the latter than the former (Henshaw et al. 2005).

### 3.3. FINDINGS

The literature review indicates that costing studies on PAC can be categorized into three main themes: 1) determining the cost of treating abortion complications per patient, in individual hospitals or for the national health system; 2) comparing the cost of methods for treating abortion complications, mainly MVA compared to other procedures such as dilation and curettage (D&C); and 3) developing methodologies and frameworks to calculate cost. Although some of the studies reviewed presented their estimated costs in

45
the local currencies of the countries of study, we present those costs in this paper in US dollars to allow for comparison across countries. We went about converting the costs in local currency to US dollars by apply the average exchange rate calculated for the year of the study.  

3.3.1. Cost of Post-Abortion Care at the Individual, Hospital and National Level

A total of eight studies on the cost of PAC are presented in Table 3.1. Four of these studies were based in Nigeria, one took place in three countries (Uganda, Ghana and Malawi), and the two others were conducted in South Africa and Tanzania. The eighth, a WHO report, calculated normative costs in 75 countries. All of the studies, aside from the WHO study, drew their samples from hospital settings, and one focused on health institutions in general. The most frequently used methodologies were interviews and reviews of case records. Duration of hospital stay and costs per patient were the most commonly measured outcomes (see Table 3.1). The length of hospital stay varies greatly across the studies with some studies providing ranges of days, mean days of hospital stay and percent distribution according to number of days spent at the hospital. Similarly, patient costs vary, with some studies providing a per day cost of treatment while others reported average cost of treatment, a distribution by cost categories, or cost per patient depending on the type of facility and severity of complications. Only one study included overhead costs in its analysis. Cost of supplies and staff were calculated in only two of the eight studies. Two studies provided total system costs. Not all studies provided methodological information on how these costs were calculated.

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8 For the 1993 study in Tanzania by Mpangile et al., we applied the average exchange rate calculated for 1994 because the 1993 exchange rates were not available.
Table 3.1. Results of Studies on the Cost of PAC at the Individual, Hospital, and National Level

<table>
<thead>
<tr>
<th>Author</th>
<th>Year of data collection</th>
<th>Country</th>
<th>Duration of hospital stay</th>
<th>National level costs</th>
<th>Overhead costs</th>
<th>Staff costs</th>
<th>Cost of supplies</th>
<th>Cost per patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adewole, 1992</td>
<td>1980-1989 Nepal</td>
<td>2-63 days; 38% spent 3-7 days, 41% spent 7-14 days, 7% more than 14 days</td>
<td>Cost of hospital management, usually paid by patients: 13% spent less than N500, 50% spent between N500 and N1000, 37% spent over N1000</td>
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<tr>
<td>Adewole, 2002</td>
<td>na</td>
<td>Nigeria</td>
<td>Total cost of treating complications was 1.4 billion Naira based on 141,000 complications a year</td>
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<tr>
<td>Figa-Talamanca et al., 1986</td>
<td>1976-1978 Turkey, Nigeria, Venezuela, Malaysia</td>
<td>10.5 days for induced abortion; 7.5 days for spontaneous abortion</td>
<td>Average cost of treatment was $223</td>
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<tr>
<td>Kay et al., 1997</td>
<td>1994 South Africa</td>
<td>Total cost of treating patients in public hospitals for all incomplete abortion (regardless of origin) is $187.7 million; cost for treating unsafe abortion is $9.74 million</td>
<td>Average of 68-269 Rand for personnel costs</td>
<td></td>
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<tr>
<td>Konje, Obisesan and Ladipo, 1992</td>
<td>January 1981-December 1987 Nigeria</td>
<td>Mean hospital stay was 28.4 days</td>
<td>Cost per patient ranged from 212-834 Rand at district level; 275-896 at regional level and 422-1497 at tertiary level, all depending on severity level of complications</td>
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<tr>
<td>Levin et al., 2000</td>
<td>April-October 1998 Uganda, Ghana, Malawi</td>
<td>Indirect costs comprised 18-42% of costs, $7-20 per unit</td>
<td>Materials comprised 31-66% of costs, ranging from $13-44 per unit</td>
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<tr>
<td>Mpangile, Lushabari and Kihwele, 1993</td>
<td>na Tanzania</td>
<td>27% spent 1 day in hospital; 46% 2 days, 23% 3-5 days</td>
<td>Tshs 1500 per day per case</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>WHO, 2005</td>
<td>2004 75 countries</td>
<td>Cost of abortion and abortion care to scale up to 55% coverage: $250 million</td>
<td>Tshs 1500 per day per case</td>
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</tbody>
</table>

Length of hospitalization

The length of hospital stay is a useful indicator of post-abortion care cost. Not only does the cost of care go up with the number of days but longer stays are generally the result of more severe complications requiring more expensive medical care. Depending on the type of complication and type of care needed, hospital stays for women experiencing complications as a result of an induced abortion can be lengthy. However, longstanding practices, bureaucratic barriers, and administrative regulations can also increase length of stay and, thereby, costs, regardless of the severity of complications and the actual cost of medical care (Benson and Crane, 2005). A seminal multi-country study by Figá-Talamanca et al. (1986) on the incidence and cost of illegal abortion laid the groundwork for assessing the hospital cost of induced abortion. However, the article presents only a brief discussion on the cost of induced and spontaneous abortion. Results based on 1,724 abortion cases in three hospitals in Ibadan, Nigeria indicated that induced abortion cases required longer hospitalization than spontaneous abortion cases.
According to a 1992 study of 840 patients at the University College Hospital in Ibadan, Nigeria, 38% of women spent 3-7 days, 41% spent 7-14 days and 7% spent more than 14 days at the hospital (Adewole 1992). Another 1992 study based on 230 women presenting with sepsis as a result of an induced abortion at the same hospital in Ibadan, estimated a mean hospital stay of 26.4 days (ranging from 1 to 300 days) (Konje et al. 1992). Much shorter hospital stays were found in a 1993 study in Tanzania of women admitted for complications of induced abortion in four public hospitals in Dar es Salaam where a quarter of patients treated spent one day in the hospital, almost half spent two days, and close to a quarter spent 3-5 days (Mpangile et al. 1993).

Cost of treatment

Four of the eight studies included in this review estimated costs of treatment: two studies provided an estimate of the costs to the patient, and the other two estimated an average cost of treatment per case. The 1993 study in Tanzania provided an estimate of the cost per day (which included drugs, meals, the cost of the stay and procedures) to treat cases of induced abortion complications (Mpangile et al. 1993). The cost per day per client was $2.84, seven times higher than the Ministry of Health’s annual health budget of $0.40 per person. The 1992 study of 840 patients at the University College Hospital of Ibadan in Nigeria confirmed that the cost of hospital management by far outweighed the potential to pay for the services: 50% of patients spent between $50 and $100, and 37% spent over $46 (Adewole 1992). This is compared to the national monthly minimum wage of N350 ($35). The other study in Nigeria (1992) of 230 patients estimated that the average cost of treatment for patients with sepsis as a result of an induced abortion was $223 while the average monthly earnings were $45 (Konje et al. 1992). A 1997 study in South Africa in public hospitals estimated the average cost per patient (sum of costs for personnel, drugs, lab work, supplies and hospitalization) to range from $46 to $325 depending on the type of facility (district, regional and tertiary) and the severity of complications (Kay et al. 1997).

National total costs and overhead costs

Only one study in Ghana, Uganda and Malawi (2000), conducted in two hospitals and two health centers in each country, provided estimates of indirect costs, defined as nonpatient contact time of health personnel, support staff time and prorated shares of maintenance and utilities (Levin et al. 2000). The cost per unit of indirect costs for PAC was estimated to range from $7-$20 and represented 18%-42% of the total cost of post-abortion care, depending on the facility and the country.

Two studies attempted to estimate the total national cost of treating abortion complications. The South Africa study (1997) calculated that the total cost of treating women in public hospitals for an unsafe abortion was $2.1 million per year (Kay et al. 1997). In 2002, Adewole et al. published an article on the economic implications of terminating an unwanted pregnancy (Adewole 2002). The authors surveyed 150 health institutions to collect information on, among other measures, the type of complications treated, the level of physician providing the service, and the cost of the service. They
estimated that the total cost of treating abortion related complications in Nigeria was $11.1 million per year.

It is worth noting that, although not specifically focused on the cost of PAC, WHO recently (2005) published a paper on estimating the cost of scaling up maternal and newborn health interventions in 75 countries (WHO, 2005). The report provides an estimate of the cost to effectively supply key, needed maternal and newborn health services for the years 2006-2015. The total annual cost, which is based on direct service delivery costs, program costs and investments in health systems, ranges from $1.0 billion in 2006 to $6.2 billion in 2015. Abortion services and post-abortion care represent 2% of the total costs, or $843 million over the whole 2006-2015 period, for all 75 countries. It should be noted that this study is based on national costs—what services should cost, given known costs for all inputs (drugs, supplies, labor, etc.)—and makes calculations using ideal amounts of each input needed to provide one client with one particular service.

Cost of supplies and staff

The study in Ghana, Uganda and Malawi (2000) also estimated the contribution of the cost of drugs and supplies and the cost of staff for the treatment of post-abortion complications, as part of Safe Motherhood and maternal health services (Levin et al. 2000). They showed that material costs comprised 31%–66% of the total costs of post-abortion complications, with per case costs of $13–$44; the researchers used the Mother-Baby Package (WHO) to calculate the direct costs of drugs and supplies. Labor costs, determined through a week long observation of personnel to determine the distribution of their time on various activities and multiplied by the employee salaries, comprised 4% to 27% of costs of treating post-abortion complications and ranged from $1–$11 per unit.

The South Africa study reported that the average personnel costs ranged from $15 to $58 (Kay et al. 1997). This information was collected through a survey describing the patients’ passage through the hospital where nurses identified the personnel attending to the patient at the various stages of care and estimated the amount of time that staff members spent with the patient. Similarly, personnel listed the typical drugs/medications, supplies, and lab tests used and their respective quantities. Personnel salaries and cost of supplies were obtained from the Department of Planning at Groote Schuur Hospital in Cape Town. The average cost of drugs ranged from $23 to $58 and the average lab costs ranged from $5 to $20.
3.3.2. Comparing the cost of MVA to Other Procedures for Treating Abortion Complications

We identified eight studies \(^9\) that estimated the cost effectiveness of performing MVA compared to other procedures such as D&C/E&C for the treatment of post-abortion complications. The studies were conducted in a variety of countries, namely Burkina Faso, Egypt, Kenya (2), Malawi, Senegal (2) and Tanzania (Table 3.2). The samples typically include women admitted to a hospital for the treatment of abortion complications. One study took place in a medical center and another focused on lower level health facilities. Interviews with women and providers, facility observations, charting the stages of patient care, and pre and post intervention surveys are the different types of methodologies used to document the cost of MVA compared to other procedures. As found in the prior section, the most commonly measured outcomes were duration of hospital stay and cost per patient (Table 3.2). Three of the eight studies calculated staff costs, cost of supplies, and cost/savings to the hospital. Only two studies estimated overhead costs, and one study estimated the total national savings incurred from switching to MVA. Five studies collected data on indicators related to the procedure time, waiting times and staff time (Table 3.3).

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\(^9\) The Bradley and Johnson studies are based on the same sample and report similar findings. For the purposes of this review, we report on the data from the Bradley paper as they provide data on more relevant measures than the Johnson paper.
Table 3.2. Results of Studies on the Cost of MVAs Compared to Other Procedures for PAC

<table>
<thead>
<tr>
<th>Author</th>
<th>Year of data collection</th>
<th>Country</th>
<th>Duration of hospital stay</th>
<th>National cost/savings</th>
<th>Overhead costs</th>
<th>Cost/savings to hospital</th>
<th>Staff costs</th>
<th>Cost of supplies</th>
<th>Cost per patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradley et al., 1993</td>
<td>March-June 1991</td>
<td>Kenya</td>
<td>MVA sites average patient stay was no more than 24 hours, compared to 40.9 hours at Eldoret and 100.7 hours at Machakos</td>
<td>Costs ranged from Kshs 28 per patient per day for Eldoret to Kshs 71 per day for Machakos</td>
<td>Savings as a result of implementation of MVA for hospital of Kshs 19.500 per year in Eldoret; Kshs. 158,289 per year in Machakos</td>
<td>In MVA sites, staff costs ranged from Kshs 23.4 to 43.3; at E&amp;C sites costs were higher -- at Machakos Kshs 71.7</td>
<td>Costs for drugs and disposable equipment ranged from Kshs 24 at Eldoret to 54 at Machakos</td>
<td>Cost per in-patient varies widely from Kshs 82 at Kisii (MVA) for a total stay of less than a day to Kshs 423 (E&amp;C) at Machakos for an average patient for 4.2 days, patient charges for E&amp;C ranged from Kshs. 38 to Kshs. 72 and in MVA sites were no more on average than Kshs. 20</td>
<td></td>
</tr>
<tr>
<td>Dabash R, 2003</td>
<td>December 2000-December 2002</td>
<td>Senegal</td>
<td>Percentage of clients staying overnight at health facilities decreased from 77% at preintervention to 40% at postintervention; mean duration from 1.3 days to 0.4 days</td>
<td>Average treatment costs including consultation fee, required lab tests, meds, facility stay decreased as a result of the intervention from 9800CFA ($14) to 7300 CFA ($11); clients receiving MVA were paying an average of $15 and clients treated with digital curage paid on average half than that</td>
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<tr>
<td>Johnson et al., 1993</td>
<td>January-June 1991</td>
<td>Kenya &amp; Mexico</td>
<td>S&amp;C average duration of hospital stay was 40.9-100.7 hours; for MVA was 18.8-23.9</td>
<td>At hosp. #1, for 1990, potential resource savings following implementation of MVA would be $702; at hosp#2 $5706</td>
<td>Higher for S&amp;C than MVA: Hosp#1 $1.40 vs $0.96; Hosp#2 $2.59 vs $1.47</td>
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<tr>
<td>Lema et al., 1997</td>
<td>January 10, 1994 - April 9, 1994</td>
<td>Malawi</td>
<td>Mean hospital stay was reduced from 3 to 2 days after introduction of MVA with 52%; staying less than 24 hours</td>
<td>Total cost per patient was lower for MVA than S&amp;C, with the cost of hospitalization contributing largest portion of total cost per patient (at hospital#1 in Kenya $3.09 for MVA/ $3.99 for S&amp;C; at hospital #2 $5.24 for MVA/$15.25 S&amp;C)</td>
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<tr>
<td>Magotti et al., 1995</td>
<td>September- November 1992</td>
<td>Tanzania</td>
<td>Duration of hospital stay was 41% less for MVA patients (E&amp;C: 17.96 hours; MVA 10.68)</td>
<td>Estimated total direct costs (for 1991) for E&amp;C $6203, MVA $2494</td>
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<tr>
<td>Nawar, Huttington &amp; Fattah, 1999</td>
<td>1996-1997</td>
<td>Egypt</td>
<td>Average patient time spent at Menia hospital declined when MVA was used from 18.5 hours to 12.8 hours; at Abou Korkas from 9.4 hours to 2.9 hours</td>
<td>Menia: average labor cost per patient was $0.71 in pre-intervention; $0.66 in post intervention; Abou Korkas: $0.36 in pre-intervention; $0.42 in post intervention; labor cost only small proportion of total cost per postabortion patient</td>
<td>Cost increased in post intervention; Menia: $7.54 in pre-intervention; $9.56 in post intervention; Abou Korkas: $3.78 in pre-intervention; $7.44 in post intervention (major component of total per patient cost)</td>
<td>8% increase in total per patient cost in Menia; 32% increase in Abou Korkas after improvements in quality of care</td>
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<tr>
<td>Population Council (a), 2000</td>
<td>1996-1998</td>
<td>Burkina Faso</td>
<td>Before training: 36 hours; after training: 19 hours</td>
<td>Cost to the patient before training $34; after training $15</td>
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<tr>
<td>Population Council (b), 2000</td>
<td>1997</td>
<td>Senegal</td>
<td>2.3 days before training; 1.2 days after training</td>
<td>Cost to the patient dropped 25%; before training $61; after training $46</td>
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</table>
Table 3.3. Results of Time for MVA Compared to Other Procedures for PAC

<table>
<thead>
<tr>
<th>Author</th>
<th>Procedure time</th>
<th>Waiting time</th>
<th>Staff time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradley et al., 1993</td>
<td></td>
<td>For Eldoret and Machakos, MVA significantly reduced waiting times for pre-evacuation for patients; post evacuation for MVA patients did not vary significantly from that of E&amp;C patients</td>
<td></td>
</tr>
<tr>
<td>Dabash R, 2003</td>
<td></td>
<td>Clients treated with MVA were more likely to experience delays in receiving care and treatment</td>
<td></td>
</tr>
<tr>
<td>Magotti et al., 1995</td>
<td>Duration of procedure was 46% less for MVA patients: MVA: 10.16 minutes; E&amp;C 18.96 minutes</td>
<td>Pre-evacuation waiting time was 3.82 hours for MVA patients, 8.51 hours for E&amp;C patients</td>
<td></td>
</tr>
<tr>
<td>Nawar, Huttington &amp; Fattah, 1999</td>
<td></td>
<td>Menia: total time spent by providers on patient care declined in post intervention; at Abou Korkas residents and nurses spent more time in post intervention</td>
<td></td>
</tr>
<tr>
<td>Population Council (a), 2000</td>
<td></td>
<td>For emergency treatment, before training 73 minutes; after training 23 minutes</td>
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</tr>
</tbody>
</table>

Length of hospitalization

The duration of hospital stay was measured in all of the studies reviewed and showed that the introduction of MVA compared to other procedures reduces the overall length of hospital stay. A well designed and thorough cost analysis study was conducted by Bradley et al. (1993) to compare the costs of MVA and Evacuation and Curettage (E&C) in treating incomplete abortions in four Kenyan hospitals among a sample of 99 women (Bradley et al. 1993). Patient stays at the MVA sites averaged less than 24 hours compared to the two sites that used E&C where the number of hours averaged 41 and 101 hours, respectively. These findings were similar to a 1997 study at Queen Elizabeth Central Teaching Hospital in Malawi of 456 women, where 52% of the patients stayed less than 24 hours after the introduction of MVA (Lema et al. 1997). Even lower hospitalization time was reported in a 1995 study of 199 women admitted with incomplete abortion at the Muhimbili Medical Centre in Tanzania. The duration of hospital stays averaged 10.7 hours for MVA patients and 18.0 hours for E&C patients (Magotti et al. 1995). A more recent study (1999) of 53 patients in two government hospitals (Menia General Hospital and Abou Korkas District Hospital) in Egypt also compared costs associated with treatment using D&C and MVA (Nawar et al. 1999). The findings indicated that the average patient time spent at the hospital declined: for example at Menia General Hospital, when MVA was used, time spent decreased from 18.5 hours to 12.9 hours. Evidence from studies in Senegal and Burkina Faso was consistent with
these findings of shorter hospital stay following the introduction of MVA (Population Council 2000a; Population Council 2000b; Dabash 2003).

**Cost of treatment**

All but one study estimated the cost per case or cost incurred by the patient for treatment. Most of the evidence shows that the average cost dropped when MVA was adopted as a method of treatment. A 2003 study in six rural districts of Senegal interviewed 180 providers and 103 clients seeking PAC and reported that average treatment costs (measured as including consultation fee, required lab tests, facility stay and medications) decreased from $14 to $11 as a result of the intervention, which used MVA as one of its components (Dabash 2003). The 1995 Tanzania study also found decreases in the average cost per case, from $4.33 with the D&C procedure to $1.74 with the MVA procedure (Magotti et al. 1995). The operations research conducted in Burkina Faso and Senegal in 2000 using pre and post intervention interviews with providers and women who experienced abortion complications showed that reductions in cost were achieved as a result of improving PAC services, including switching to MVA as the preferred method of treatment for PAC (Population Council 2000a; Population Council 2000b). For example, in the Burkina Faso study, the cost to the patient dropped from $34 during the pre intervention to $15 at post intervention. It is important to note that besides switching from the D&C procedure to the MVA procedure for removing products of conception, other changes in treatment protocols were also typically introduced in these operations research projects, so not all savings can be attributed to the MVA procedure itself.

Contrary to these findings, the study in Egypt showed that per patient costs actually increased at post intervention, mainly due to increases in supplies and medicines (Nawar et al. 1999). The upgrading of services was not offset by a decrease in the length of hospital stay.

**National level cost and cost to the hospital**

One study provided estimates of total cost at the national level, and three studies estimated the direct costs to the hospital or the savings incurred by using MVA compared to other procedures. The 1995 Tanzania study applied per patient costs to the 1,432 uterine evacuations completed in 1991 to calculate the total direct cost per annum for MVA ($2,494) as compared to E&C ($6,203), with the former procedure representing a cost reduction of more than 50% (Magotti et al. 1995). The Kenya study of 1993 estimated the savings that would be made if MVA were implemented in all provincial and district level hospitals (Bradley et al. 1993). The authors assumed that 29,000 incomplete abortion patients are treated per year and applied the cost savings derived from the study at Eldoret hospital of $0.35 per patient. They then included overhead costs and came up with a total national savings of $168,510 (approximately $6 per patient). Had the findings from Machakos hospital been used instead, the annual savings would
amount to $277,700 (approximately $10 per patient). The study presents estimates of the savings for each of the hospitals, and they range from $278 per year at Eldoret to $845 per year at Machakos.

**Overhead cost, cost of supplies and staff**

Three studies presented data on the cost of supplies and on the cost of staff. Two studies provided data on overhead cost. Both the Kenya and the Egypt studies presented estimates of all three measures. The Kenya study reported that staff costs and overhead costs were lower in MVA sites compared to D&C sites. However, the cost of drugs and disposable supplies did not differ significantly between MVA and D&C sites (Bradley et al. 1993). In the Tanzania study (1995), however, the per patient average cost of drugs, infusions and syringes was 14.5 times more for D&C than MVA (Magotti et al. 1995). In the Egypt study, the costs of staff and supplies were higher at post intervention (MVA) than pre intervention (D&C), reflecting their finding of higher total per patient cost (Nawar et al. 1999). The authors also provide estimates of overhead costs, ranging from $7.96 a day at Menia Hospital to $9.22 a day at Abou Korkas Hospital.

**Time estimates**

Table 3.3 highlights estimates of time and shows that overall waiting times, staff time spent with the patient, and procedure time decreased when MVA was introduced as a treatment method for PAC. By reducing waiting, procedure and staff time, significant cost savings can be made.

Overall, the evidence from the various studies reveals that MVA is a cost-effective method for managing incomplete abortion because length of hospital stay is decreased, waiting time, procedure time and staff time are lessened and various costs are reduced. The literature reviews confirm these findings on the cost effectiveness of treating abortion complications by switching to MVA from D&C or E&C (Jowett 2000; Dayaratna et al. 2000).

**3.3.3. Frameworks and Models for Future PAC Cost Estimates**

Of the articles reviewed, two studies provide thorough methodologies and a working framework on which to build future work. Kay et al. (1997) developed a comprehensive model to assess the direct medical costs associated with the treatment of incomplete abortions for women who receive PAC services in South Africa, by taking into account the severity of complications and hospital setting (Kay et al. 1997). A number of measures were used to calculate cost estimates, primarily collected through a

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10 It would be more useful to present these savings as a fraction of the total public health spending on gynecology and obstetric care rather than in absolute dollar values. However, data for countries or for specific hospitals’ OB/GYN budgets are not available.
questionnaire given to nurses in charge of the gynecology wards. The indicators included patient time spent at the hospital; personnel attending to the patient; length of time in contact with patient; drugs and medications, lab tests, disposable supplies; salary; and hospitalization costs (such as overhead, rent, maintenance and depreciation costs). The authors point out that a limitation of their model is that it does not take into account indirect costs such as related morbidity and eventual psychological consequences of abortion. The approach used in this study is different in some respects from the MBP model developed in 1994 by WHO, including that the MBP came up with a set of standard inputs for treating complications whereas this study got experts to estimate what they thought the various input costs actually were. Secondly, the level of detail of costed inputs is much greater in the MBP than it is in this study. Additionally, in the MBP the main complications and their respective treatments are modeled, whereas the approach by Kay et al. is to distinguish three severity levels.

An older study by Bradley et al. (1993) used a comprehensive methodology to estimate various costs associated with MVA compared to D&C (Bradley et al. 1993). The investigators collected data on a number of measures, including staff time (costs based on Ministry of Health salary tables), in-patient costs and overhead costs (food, clothing, line, water, electricity, postal charges, patient travel, stationary, medical records and cleaning materials), drugs and equipment (obtained through MOH and price per unit computed). They also used a chart detailing the stages of a patient’s journey through the hospital from arrival to departure. With this methodology, they were able to identify the staff in contact with patient, time spent with the patient, complications experienced, number of nights in the hospital and the number of times the nurses took patient observations. A study by Johnson et al. (1993) uses the same methodology and data to present findings on Kenya and Mexico.

**Software packages to calculate cost**

A number of different methodologies and tools have been devised to calculate the costs of reproductive health care services. We identified two useful software packages that can be used to estimate the cost of PAC.

WHO developed the *Mother-Baby Package Costing Spreadsheet*— a tool designed to estimate the cost of implementing a maternal and newborn health intervention (WHO 2005). The model is based on a set of assumptions, representing a hypothetical rural district population. Ideally, data that reflect the specific local situation should be used. All of the inputs can be modified and include direct costs, overhead costs and capital costs that can be calculated by intervention (management of abortion complications), and by type of facility (hospital, health centre and health post). The costing spreadsheet allows researchers to calculate the cost of current services, as well as the cost of upgrading the intervention to meet the standards and objectives of the *Mother-Baby Package*.

Only one software package, “Savings” developed in 2005 by Ipas, allows estimates and comparisons focusing specifically on the costs of abortion and post-abortion care to
health systems. The package allows for the selection of different types of service delivery systems and policy frameworks, with default data from Uganda.

Using the “Savings” model, a paper by Johnston et al. presented calculations of the per case cost of abortion care based on four frameworks of abortion policy/laws and service delivery systems for abortion care (Johnston et al. 2007). These four models are the following: 1) “heavy restrictions” on abortion and an “ad hoc approach” to service delivery (defined as centralized care and costly interventions such as D&C); 2) a “restrictive legal setting” that used “preferred interventions” (defined as decentralized care and interventions such as MVA performed by midlevel providers) for treating complications; 3) a “legal setting” allowing abortion and an “ad hoc approach” to service delivery; and 4) a “liberal setting” that used “preferred interventions.” The authors estimated that the cost of abortion care was highest in a setting that placed heavy restrictions and adopted an ad hoc approach to service delivery—yielding a per-case cost of $45. The most inexpensive per case cost of $6 would exist within a liberal setting that used preferred interventions. The other two settings ranged in price from $25-$34.

Aside from the “Savings” model, all other software packages we identified focus on reproductive health services in general or on family planning. 11

3.4. CONCLUSIONS AND IMPLICATIONS

This chapter synthesized key findings from the existing 28 published studies on the economic costs of PAC in Africa. The literature spanned almost two decades, covering 11 countries. One key focus is assessing the cost of MVA compared to other procedures, and a second is estimating the cost of treating abortion complications at the case, hospital or health system level. Most studies measured the length of hospitalization and direct cost per patient; indirect costs were rarely included in cost analyses, partly because of the difficulty in estimating the proportion of these costs that were associated with PAC.

Some conclusions can be drawn, even though the available evidence is limited. Overall, compared to other methods, MVA is a more cost-effective and safer method of treatment compared to D&C. MVA results in less hemorrhage, fewer infections, and less pain. The cost reduction is due to a reduction in length of hospital stay, treatment costs, lower staff and overhead costs for the MVA procedure in comparison with D&C. MVA should

11 Cost and Results Analysis (2003) developed by PRIME II consists of questions, checklists and sample spreadsheets to assist PI practitioners in a step by step process to design cost effective family planning and reproductive health interventions; Cost Revenue Analysis Tool (CORE) developed by Family Planning Management Development and Management Sciences for Health 1995— to determine actual and potential costs, revenues and surpluses or deficits at existing or planned clinics; Cost Estimate Strategy (CES) was developed in 1997 by Management Sciences for Health. CES provides models to estimate commodities for organizations providing reproductive health services; SPECTRUM was developed by the Futures Group to project the need for reproductive health services and the consequences of not addressing reproductive health needs; Cost Analysis Tool (CAT) developed by EngenderHealth to analyze direct costs to deliver reproductive health services; designed for costing facility based service delivery.
therefore be made widely available as a method of treatment for women who experience abortion complication. With respect to the cost of PAC, the findings indicate that providing PAC is a costly undertaking for the patient, for the hospital and for the health system as a whole. Patients can be charged more for treatment than their average monthly income and health care systems can incur substantial costs. This is not an argument against provision of PAC because PAC saves lives and should be available to women that need it. However, the service can be provided at lower costs by using more appropriate technologies and by training staff to use them efficiently.

For the most part, the literature on the topic of economic costs of PAC in Africa is rather limited and outdated as we were only able to identify 28 studies over a 20 year period. Comprehensive, up-to-date information on the economic costs of unsafe abortion is essential to informing public discussion. New research on this topic is, therefore, needed, particularly in the many African countries where no research has yet been done. While some key conclusions may be applicable across countries, the specific situation in a given country may be very different, and it is often the case that policymakers are not persuaded by evidence from other countries. While several operations research studies compare MVA to D&C treatment for post-abortion complications, studies that estimate the overall cost of unsafe abortion at the national level are very rare, and studies providing costs broken down by type of complication and by cost components are equally rare. This type of study would be extremely useful for informing the policy debate within countries and internationally.

One of the other limitations of the available research is the lack of comparability between studies in terms of methods, design and measures used. Some studies use case records, others observe women over a set period of time to obtain information on their hospital experience and process of care, while others interview women themselves. This makes it difficult to obtain any kind of trend information and to make comparisons across countries.

The majority of studies take place in urban centers, typically in tertiary hospitals where women with more severe complications are most commonly referred for treatment. Women in rural settings and those who seek care in the private sector (modern or traditional care) or who do not seek care at all are not included in these cost estimates. These studies are, therefore, not representative of all women seeking care for abortion complications.

Although length of hospitalization and cost per patient were the most frequently measured indicators, there is variation in the way these outcomes are defined. It would be useful to create a standard set of measures that would permit within and between country comparisons. The indicator “length of time women are hospitalized” is an important one to continue to measure as it is a key factor influencing cost. However, it must be borne in mind that one important reason for cross-country variation in this cost component is the difference in protocols among countries with respect to the recommended duration of hospital stay, even for patients with similar clinical diagnoses. Providing a total cost of what the patient is required to pay for PAC, especially compared to the average monthly
income, provides a useful indicator of how accessible services are to women and how cost might be a deterrent for seeking care. Estimates of national costs are equally important as they inform policymakers on the significant share of resources that are being consumed by PAC and give an indication of the strain on the health care system to meet the needs of these women and provide other services at the same time.

There is clearly a need for more accurate data, such as the proportion of women who seek care for abortion complications in the private sector. Data collected must be better and further disaggregated based on the kind of complications women experience, the kind of treatment they receive, and the kind of facility where this treatment occurs. There is also a need for more comprehensive methodologies to specifically calculate the key direct costs of treating complications of unsafe abortion and providing related services, such as post-abortion family planning, including costs of drugs, supplies, materials, labor disaggregated by type of personnel, and length of hospital stay. Ideally, all of these costs should be included in costing studies, but at a minimum those costs that are included should be specified and quantified separately so that valid comparisons between studies can be made. Finally, conducting research with samples that are more representative and more diverse would help strengthen the evidence base.

This review has made it clear that studies encompassing indirect costs, such as loss of productivity and family income, are conspicuous by their absence. However, such costs are likely to be much larger for the overall economy than the direct health costs of treating the consequences of unsafe abortion, even though these are themselves substantial. The developing world as a whole would benefit from such research and Africa even more so, given that no research on indirect costs has been done there and given the critical role that unsafe abortion plays in maternal health in Africa.

Although not a focus of this chapter, it is important to note the lack of research on the longer term consequences (health, social and psychological) of morbidity and mortality due to unsafe abortion. It is imperative that these kinds of indirect costs, which can also have important negative impacts on the wellbeing of women and their families, including recurring morbidity such as chronic pain, infertility and the stigma and mental health impact of such chronic conditions, be included in a future research agenda.

The evidence presented here indicates that the cost of unsafe abortion in Africa has not yet been adequately researched. As yet, costing studies have not provided enough data to estimate the direct health costs of post-abortion complications, much less to assess the overall economic cost of abortion-related morbidity and mortality. More rigorous, timely and comprehensive research on the costs of PAC and on the savings incurred by implementing access to quality care is needed to better inform policymakers to implement policies aimed at preserving women’s health and lives.
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<td>Adewole et al., 2002</td>
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<td>Figa-Talamanca et al., 1986</td>
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<td>Turkey, Nigeria, Venezuela, Malaysia</td>
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<td>Levin et al., 2000</td>
<td>April-October 1998</td>
<td>Uganda, Ghana, Malawi</td>
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<td>Bradley et al., 1993</td>
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<td>Dabash R, 2003</td>
<td>December 2000-December 2002</td>
<td>Senegal</td>
<td>18 sites, district health centers and health posts in six rural districts in regions of Kaolack and Fatick</td>
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<td>Johnson et al., 1993</td>
<td>January-June 1991</td>
<td>Kenya &amp; Mexico</td>
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<td>2 hospitals data collected on S&amp;C patients before MVA introduced; MVA already implemented at other 2 sites; rapid assessment data collection techniques; field staff documented (through observation) expenditures of time and resource units by accompanying patients from the beginning to end of hospital stay over a 7 day period</td>
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<td>Lema et al., 1997</td>
<td>January 10, 1994 - April 9, 1994</td>
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<td>Nawar, Huttington &amp; Fattah, 1999</td>
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<td>1996-1998</td>
<td>Burkina Faso</td>
<td>2 large hospitals in Ouagadougou and Bobo Dioulasso</td>
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<td>Interviews</td>
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<td>Population Council (b), 2000</td>
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CHAPTER 4:  
ESTIMATING THE COST OF POST-ABORTION CARE IN NIGERIA: A CASE STUDY

Akinrinola Bankole, Susheela Singh, Michael Vlassoff, Vanessa Woog

4.1.  INTRODUCTION

4.1.1.  Background

Nigeria is the most populous country in Sub-Saharan Africa and the ninth most populous in the world: with an estimated 148 million people, including 34.5 million women of reproductive age (15-49) (UN Population Division 2007). The country is divided into six major regions (known as geo-political zones), richly diverse in terms of culture, ethnicity, and socio-demographics. All three Northern regions, as well as much of the South, are primarily rural—the South East region is the only region that is mostly urban. The South East and South South regions are predominately Christian, the North East and North West regions are mainly Muslim, and both religions are well represented in the North Central and South West regions. In addition to religious groups, there are about 250 ethnic groups, the largest three being the Hausa-Fulani in the northern areas, the Igbo in the southeast and the Yoruba in the southwest (National Population Commission and ORC Macro 2004).

The diversity seen in Nigeria is often associated with the wide-ranging differences in the contexts of women’s lives, including their educational attainment, position in the paid workforce, marriage and family life, fertility preferences, and access to reproductive health care, including contraceptive and other services. In recent decades, many societal changes have greatly affected these circumstances. Urbanization and modernization have created opportunities for women that reach beyond traditional roles of childbearing and domestic work, giving them greater prospects for paid work and educational advancement.

As life goals change, women are ultimately having and wanting fewer children. Nigerian women were on average having roughly 6.3 children in 1990, and in 2003 they were having 5.7 children. Even so, women are having more children than they want — about 5 children are desired as compared to the 5.7 they actually have. In 2003 about one in seven recent births was either mistimed or unwanted. At the same time, contraception use in Nigeria is extremely low—only 13% of all sexually active women use any method, effective/modern or traditional.

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12 Authors names are written in alphabetical order: Akinrinola Bankole is Director of International Research, Guttmacher Institute; Susheela Singh is Vice President for Research, the Guttmacher Institute, Michael Vlassoff is Independent Consultant; and Vanessa Woog was Research Associate at the Guttmacher Institute at the time this chapter was written.
Women who are sexually active, do not want to have a child soon or at all, and are not using any method of family planning are considered to have an unmet need for contraception. One in five sexually active women have unmet need for any method and two in five have an unmet need for a modern method of family planning (Hussain et al. 2005). These factors conspire to ensure the high level of unplanned pregnancy. Many of these pregnancies end in unsafe abortion, thereby contributing to the country’s high maternal mortality ratio—800 per 100,000 live births (WHO, 2004).

4.1.2. Abortion in the Nigerian Context

In Nigeria, abortion is legal only in order to save a woman’s life, yet induced abortion is a widespread occurrence. In 1996, 610,000 abortions, or 25 abortions per 1000 women aged 15-44, were estimated to take place annually in Nigeria. If the 25 per 1000 rate is assumed to have remained constant in the years that followed, it translates to 740,000 abortions in 2005 (Henshaw et al. 1998). A 2002-2003 study among women aged 15-49 found that half of unplanned pregnancies ended in abortion and estimated that 10% of women of childbearing age had undergone an induced abortion (Bankole et al. 2006). But this is just the tip of the iceberg since typically abortions are grossly under-reported in surveys. This study also found that one in four women obtaining an abortion experienced serious, life-threatening complications and that only about a third of these women sought treatment. Among the women who were treated for complications, 3% subsequently died.

It is clear from these figures that unsafe abortion is a major problem for Nigerian women’s health. Unsafe abortion also imposes heavy financial costs on women and their families: they must pay a portion of the treatment of complications and may suffer loss of income due to temporary or permanent disability associated with the complications. A relatively high proportion of hospital admissions were due to unsafe abortion complications (Megafu and Ozunma 1990; Adewole 1992). This places a heavy burden on the existing health care system, especially in a resource poor setting such as Nigeria, which must expend scarce medical resources on post-abortion care.

Unintended pregnancy is the root cause of unsafe abortion in Nigeria. With modernization and the associated high costs of raising children, Nigerian couples increasingly desire fewer children. But many couples are finding it difficult to realize this desire, as actual fertility tends to be higher than the desired. For example, according to findings from a 2002-2003 community-based survey, almost 1 in 3 Nigerian women of childbearing age have had an unwanted pregnancy, and half of them attempted to resolve the problem through an abortion. Among those who attempted to abort the pregnancy, about 2 in 3 succeeded in doing so (Bankole et al. 2006).

Unmet need for family planning is the major reason for unintended pregnancy in the country. In 2003, 27% of women aged 15-49 were sexually active and able to become pregnant and did not want to have any more children or wanted to delay having another one but were using no method of contraception (22%) or were using ineffective (traditional) methods (5%) (Bankole et al. 2006). Although contraceptive use has increased substantially in the last 10 years, the level of current use is still very low. For
example, among married women, 13% were using any method and 8% were using a modern method in 2003 compared with 6% and 4%, respectively, in 1990 (National Population Commission and ORC Macro 2004; Federal Office of Statistics and IRD/Macro International 1992).

4.1.3. The Costs of Post-Abortion Care and the Objectives of this Chapter

To date, there has been little information on the cost of post-abortion care in Nigeria. A few key articles have been published, but are outdated or focus only on certain components of economic cost. A 1992 hospital based study of 230 patients found that the average cost of treatment for complications as a result of an induced abortion was $223 compared to the average monthly income of $45 (Konje et al. 1992). A similar 1992 study of 840 patients who presented at the University College Hospital in Ibadan found that the cost of treatment for abortion complications ranged from $50 to over $100 at a time when the national monthly minimum wage was $35 (Adewole, IF, 1992). More recently, a 2002 study estimated that the total annual national cost of treating complications from induced abortion was 1.4 billion Naira (about $11.1 million) (Adewole 2002). The authors sampled 150 health institutions and a questionnaire was administered. One question on cost was asked and respondents were to provide the cost of the service based on the gestation of pregnancies to be terminated. While this national estimate seems plausible, it is not clear from the published article how the authors arrived at this cost estimate. For example, there is no indication in the article about how the average cost was obtained, or about what kinds of costs were included in the estimate.

Updated cost estimates are needed to help policy makers and program planners make informed decisions aimed at reducing unsafe abortion itself, lowering health care expenditures for the treatment of unsafe abortion complications, and achieving a more efficient allocation of scarce resources. In addition, empirical data on the complications women experience and the medical care they receive provide insights into the magnitude of financial and resource costs and can also inform the development of programs and policies. The purpose of this chapter is to help fill existing knowledge gaps by providing a more up-to-date and fuller picture of the costs of providing post-abortion care than has been previously available, based on multiple sources of recent data.

The specific objectives of this chapter are:

1) To document the severity of abortion complications and to describe the medical treatments received.

2) To provide new information on the out-of-pocket costs that women incur when they obtain hospital-based treatment for post-abortion complications.

3) To estimate the annual cost of post-abortion care (PAC) to the Nigerian health system by using the Mother-Baby Package (MBP) costing tool developed by WHO, recalibrated with some cost data and other country specific parameters.

13 Using the average exchange rate of $1=126.4 Naira (calculated for 2002).
4) To estimate the annual cost of providing contraceptive services to prevent pregnancies that resulted in unsafe abortion in Nigeria.

5) To determine the extent to which the Nigerian health care system is bearing the burden of the cost of PAC.

4.2. Data Sources

Data used to provide the various cost estimates come from a number of sources. This section provides a basic description of each of the main data sources, and further information on measures and methodology is provided in each subsection of the chapter where relevant.

4.2.1. Data from Nigeria

i) Nigeria Hospital Based Survey (HBS), 2002-2003

In 2002-2003, the Guttmacher Institute and its Nigerian partner organization, The Campaign Against Unwanted Pregnancy (CAUP), carried out a survey of hospitalized women treated for pregnancy-related complications or who were admitted into the hospital for induced abortion. The survey took place in eight states (Ekiti, Gombe, Kaduna, Kano, Kogi, Lagos, Imo and Rivers). Although the sample is not nationally representative, the eight states represent the four major health regions (Northeast, Northwest, Southeast and Southwest), and two states were selected from each region. Using the rural-urban distribution of women in Nigeria as maintained in the sampling frame of the National Population Commission, the most urbanized state and the most rural state were chosen in each of the four health zones. To provide representation of the recently created six geo-political zones, the sampled states were selected such that at least one state came from each of the current six geo-political zones (North East, North West, North Central, South East, South West and South South).

The hospital sample consisted of seven tertiary (teaching) hospitals, ten secondary (government) hospitals, 14 private hospitals, and two mission hospitals, most of which were located in urban areas. Structured face-to-face interviews were conducted with 2,330 women in the 33 hospitals, and the attending physician for each woman was interviewed, providing matched physician data for each surveyed patient. The sample included women who sought treatment for complications resulting from abortion attempts outside of the hospital, as well as women who came to the hospital to voluntarily request an abortion, women who had experienced complications from a spontaneous abortion, and women with other types of pregnancy-related problems such as ectopic pregnancy. For this analysis the sample was restricted to women who had attempted or obtained an induced abortion outside of the hospital and sought treatment at the hospital (N=516), and these women were compared to those who sought treatment for a spontaneous abortion (N=422). An abortion was considered induced rather than spontaneous if the patient had made an abortion attempt prior to coming to the facility or if she had come to
the hospital seeking an abortion. Other cases were classified according to the physician’s diagnosis. Patients were considered to have attempted to end their pregnancy if they reported having done so in their interview or if the physician indicated that either the patient or someone else had said that an attempt had been made. We analyzed the data from women and from their physicians.

**ii) Nigeria Community Based Survey (CBS), 2002-2003**
A household based survey, using face-to-face structured interviews, was conducted with 2,972 Nigerian women aged 15-49 in 2002-2003. The survey was conducted in the same eight states as the Hospital Based Survey and, although not nationally representative, represents all regions of the country. In addition to background characteristics, fertility history and contraceptive use, women provided detailed information about their unwanted pregnancy and induced abortion experiences.

**iii) Key informants in Nigeria, 2005**
To provide supplementary Nigeria-specific data for the present analysis, we designed and implemented a small-scale key informant survey in September-November 2005. One health provider at each of the 10 facilities selected in Oyo and Osun States was interviewed to obtain the average values for specific post-abortion care inputs and their costs, namely drugs, supplies, personnel and length of hospital stay. Three primary health care clinics, three secondary health care centers, two private hospitals and two tertiary hospitals were selected. The inputs were employed in the modeling exercise using the MBP. Although information from key informants is not necessarily representative nationally and may contain certain measurement errors, it provides a better empirical basis for the application of the MBP model to Nigeria (as opposed to using only default values) and represents a unique source of data that should prove useful to other researchers for further assessment of the cost of treating post-abortion care in Nigeria.

**iv) Study to estimate abortion incidence in Nigeria, 1996**
A national study of 672 health facilities in Nigeria estimated the incidence of abortion (Henshaw et al. 1998). This study estimated that the abortion rate in Nigeria was 25 per 1,000 women aged 15-44, and that there were 610,000 abortions in 1996. Projecting forward by applying this rate to population estimates for 2005, we estimate that 760,000 abortions occurred in Nigeria in 2005, and this number underlies our estimates of the national cost of unsafe abortion in Nigeria.

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14 The health providers were four consultant ob/gyns, one resident ob/gyn, one principal medical officer, two medical officers and two midwives.
4.2.2. Methodology to estimate contraceptive costs

We draw from the methodology used in a recent study by the Guttmacher Institute to estimate the annual costs of providing contraceptive services and supplies to Nigerian women who resort each year to unsafe abortion to terminate unwanted pregnancies, assuming that they would instead use a modern method of contraception to prevent that pregnancy (Singh et al. 2003). That study, which estimated the cost of contraceptive services worldwide, used data from a UNFPA database that compiled available published data from all developing countries on the costs of providing contraceptive services and supplies (for each method) as well as other reproductive health costs (UNFPA, 2002). We assume that Nigerian women who had an unsafe abortion would have the same method-specific use pattern as do all Nigerian women of reproductive age, based on information from the 2003 Nigerian Demographic and Health Survey (National Population Commission and ORC Macro 2004). While evidence tends to suggest that women who have abortions are more likely to use an effective method than those who do not have abortions, it has also been noted that women who have abortions may overstate their use of effective methods to avoid blame for not doing enough to prevent unwanted pregnancy. As a result, we expect that this assumption is not too far from the reality. We also assume that each unsafe abortion in a given year has been performed on a separate woman, and we therefore estimate for one year of contraceptive protection to prevent each unsafe abortion. To the extent that a small proportion of women will have two abortions in a given year, this is a conservative assumption: a single year of contraceptive protection would have prevented two abortions, not one, in the case of such women, and the estimated cost of preventing unsafe abortions is therefore higher than it should be, while the benefit (prevention of the cost of PAC) remains the same.

4.3. Method of Analyses

4.3.1. Women’s Abortion Treatment Experiences in Nigerian Hospitals and the Associated Costs

Based on data from women seeking treatment for abortion complications at hospitals in Nigeria, this section provides information on the type of abortion complications, the treatment received, and the out-of-pocket costs incurred by women. Although the severity

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15 Adding up the average duration of months for each stage (0.5*6 months= time taken to become pregnant; 0.5*2.5 months= gestation at the abortion; 2.5 months= period of infecundability; 6 months= time taken to become pregnant again; 2.5 months= gestation at a second abortion) = about 15 months to the time of the second abortion. Allowing that some women will take less time to become pregnant than six months, which is an average and contains a range from 1 or more months, a small proportion of women would become pregnant for a second time in the same year that they had an abortion: some women who take one month to become pregnant might have a second abortion within 8 months; some take two months to become pregnant, may have an abortion within nine months of their prior pregnancy, and so on. These averages do not take into account the fact that some women who have had an abortion begin to use contraception after the abortion, and some women who become pregnant again will not seek a second abortion. Taking all of this into account, we conclude that the proportion of women who had an abortion in a given year, and who go on to have a second abortion in that year, is quite low.
of complications women experience is not a direct measure of cost, it determines the type of care that is required and length of hospital stay, both of which directly influence the cost of treatment.

**Measures/Indicators**

The primary source of information is the 2002-2003 Hospital Based Survey (HBS), particularly as obtained from the principal medical provider of each interviewed patient who was asked about diagnosis, medical care and any surgical procedures provided. The following categories of diagnosis were recorded: retained products of conception, hemorrhage, fever, sepsis, pelvic infection, instrumental injury, shock, poisoning and death. Providers could mention more than one type of diagnosis.

Data are also presented on the medical treatment and procedures provided. These include the proportion of hospitalized patients who had a blood transfusion, received uterine evacuation (MVA, D&C or labor induction), intravenous antibiotics, oral antibiotics, uterotonics, other medications, abdominal surgery and the number of days spent in the hospital. Providers could select one or more treatment/procedures. The mean number of days spent at the hospital was calculated, and outpatients (referred to as “day patients”) were counted as having been in the hospital for half of a day.

Providers were also asked to come up with the direct monetary costs associated with treatment. In addition, providers were asked if patients had additional expenses for supplies used in the hospital and medications. The mean cost of additional expenses is averaged for those who incurred each type of additional expense. The total cost is estimated based on the sum of the total hospital charge and the cost of the two additional specific items (including additional expenses for doctors), averaged across all post-abortion patients.

All measures, aside from cost, were analyzed according to regions, North and South. Data are shown separately for women who sought treatment for an induced abortion and for women who obtained treatment for a spontaneous abortion, except for the cost measures which focused exclusively on women who sought treatment for an induced abortion.

**Results**

**Diagnosis**

Surveyed women who came in for treatment presented with a number of different complications. Retained products of conception was the most commonly reported complication.

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16 Uterotonics are medications (uterine stimulants) given to cause a woman’s uterus to contract or to increase the frequency and intensity of the contractions. These medications are used to induce or speed-up labor; facilitate uterine contractions following a miscarriage; induce abortion; or reduce hemorrhage following childbirth or abortion. The three uterotonics used most frequently are oxytocins, prostaglandins, and ergot alkaloids.

17 The following question was asked of all providers: “What was the total hospital charge to the woman?” Twenty-two cases were missing this information.

18 This is not presented as a stand alone average because only 9 providers reported additional expenses for doctors.
diagnosis (Table 4.1), with close to half (48%) of all women presenting with complications from induced abortion—58% in the North and 40% in the South—receiving this diagnosis. Hemorrhage was the second most common complication: almost a third of women who had undergone induced abortion and a quarter of women presenting due to spontaneous abortion experienced hemorrhage. Among women who had an induced abortion, a third presented with fever (33%), and this group spent an average of 3.3 days in hospital. On the other hand, only 6% of women who experienced a spontaneous abortion were reported to have fever.
Table 4.1. Diagnoses for women presenting for abortion complications according to type of abortion by region, Nigeria, Hospital Based Study of Unwanted Pregnancy, 2002-2003

<table>
<thead>
<tr>
<th>Diagnosis at discharge</th>
<th>Induced abortion outside hospital, complications treated</th>
<th>Spontaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>North</td>
</tr>
<tr>
<td>Number (unweighted)†</td>
<td>516</td>
<td>247</td>
</tr>
<tr>
<td>Retained products of conception (%)</td>
<td>48.4</td>
<td>57.5</td>
</tr>
<tr>
<td>Hemorrhage (%)</td>
<td>33.3</td>
<td>30.0</td>
</tr>
<tr>
<td>Fever</td>
<td>33.1</td>
<td>28.3</td>
</tr>
<tr>
<td>Mean number of days in hospital for a fever*</td>
<td>3.3</td>
<td>2.9</td>
</tr>
<tr>
<td>% had a fever of 103°F or above</td>
<td>17.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Sepsis (%)</td>
<td>22.3</td>
<td>27.1</td>
</tr>
<tr>
<td>Pelvic infection (%)</td>
<td>20.3</td>
<td>25.5</td>
</tr>
<tr>
<td>Instrumental injury (%)</td>
<td>10.9</td>
<td>13.4</td>
</tr>
<tr>
<td>Shock (%)</td>
<td>5.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Poisoning (%)</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Death (%)</td>
<td>2.3</td>
<td>2.4</td>
</tr>
</tbody>
</table>

† For region, two cases are missing.
*Ranged from 1 day to 41 days.

According to providers, one fifth of women who sought treatment for an induced abortion had sepsis, and the same proportion had a pelvic infection. Instrumental injury was diagnosed for one in ten women, and close to 6% experienced shock or poisoning. The complications of induced abortions resulted in the deaths of 2.3% of the women treated. Altogether, only 7% of all patients with spontaneous abortions were diagnosed with sepsis, pelvic infection, instrumental injury, shock, poisoning or death.

Treatments received by women presenting for abortion complications

Information on the types of treatments received by women suffering abortion complications and the number of days women spent in hospital for treatment is presented in Table 4.2.
Table 4.2. Various treatments received by women presenting for abortion complications according to type of abortion by region, Nigeria, Hospital Based Study of Unwanted Pregnancy, 2002-2003

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Induced abortion outside hospital, complications treated (N=516)</th>
<th>Spontaneous abortion (N=422)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>North</td>
</tr>
<tr>
<td>Number (unweighted)†</td>
<td>516</td>
<td>247</td>
</tr>
<tr>
<td>Uterine evacuation (%)</td>
<td>77.3</td>
<td>87.4</td>
</tr>
<tr>
<td>MVA</td>
<td>53.7</td>
<td>66.8</td>
</tr>
<tr>
<td>D&amp;C/D&amp;E</td>
<td>17.1</td>
<td>11.7</td>
</tr>
<tr>
<td>Labor induction</td>
<td>6.6</td>
<td>8.9</td>
</tr>
<tr>
<td>Abdominal/other surgery* (%)</td>
<td>13.0</td>
<td>8.1</td>
</tr>
<tr>
<td>Blood transfusion (%)</td>
<td>23.8</td>
<td>22.3</td>
</tr>
<tr>
<td>Blood amount in units¥</td>
<td>2.6</td>
<td>2.5</td>
</tr>
<tr>
<td>IV antibiotics (%)</td>
<td>49.0</td>
<td>47.4</td>
</tr>
<tr>
<td>Oral antibiotics (%)</td>
<td>82.2</td>
<td>83.8</td>
</tr>
<tr>
<td>Uterotonics‡ (%)</td>
<td>38.4</td>
<td>44.5</td>
</tr>
<tr>
<td>Other medications (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain reliever</td>
<td>48.6</td>
<td>59.1</td>
</tr>
<tr>
<td>Hemotinics</td>
<td>20.2</td>
<td>33.2</td>
</tr>
<tr>
<td>IV Fluids</td>
<td>13.2</td>
<td>17.8</td>
</tr>
<tr>
<td>Other**</td>
<td>25.0</td>
<td>29.1</td>
</tr>
<tr>
<td>Other treatments (%)</td>
<td>1.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Days in hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>day patient</td>
<td>33.1</td>
<td>34.7</td>
</tr>
<tr>
<td>1 day</td>
<td>22.6</td>
<td>20.7</td>
</tr>
<tr>
<td>2</td>
<td>14.4</td>
<td>17.8</td>
</tr>
<tr>
<td>3-4</td>
<td>12.0</td>
<td>13.2</td>
</tr>
<tr>
<td>5-9</td>
<td>11.0</td>
<td>11.6</td>
</tr>
<tr>
<td>10 or more</td>
<td>6.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Mean number of days at hospital§</td>
<td>2.9</td>
<td>2.3</td>
</tr>
</tbody>
</table>

† For region, two cases are missing.
*Mainly includes salpingectomy, laparotomy, hysterectomy, uterine/vaginal/cervical repair.
**Mainly includes anti-malarial drugs, tetanus toxoid/tt injection, multivitamins.
¥ 1 unit=500mls
‡ An agent that overcomes relaxation of the muscular wall of the uterus and stimulates contraction
§ Day patient was treated as 1/2 day patient.
Most patients (77% of women who had an induced abortion and 90% of women who had a spontaneous abortion) received a uterine evacuation, usually by means of vacuum aspiration, which is generally considered to be the safest method and has been shown to be cost effective. Regional differences show that women in the North who came in for treatment of an induced abortion were more likely to receive MVA (67%) compared to women in the South (42%). The D&C procedure was used more often by providers in the South (22%) than in the North (12%). An additional substantial proportion of women being treated for complications of an induced abortion had abdominal surgery, while this treatment was negligible among women with spontaneous abortion.

A high proportion of women were given oral antibiotics—whether for the treatment of an induced (82%) or spontaneous (88%) abortion. Other medications that were most frequently administered to women with complications from an induced abortion were IV antibiotics (49%), pain reliever (48%) and uterotonics (38%); the corresponding proportions among women who received treatment for a spontaneous abortion were 27%, 37% and 52%, respectively.

Twenty-four percent of women treated for induced abortion complications required blood transfusions, with an average of 2.6 units of blood (1 unit=500mls) per patient. Only 8% of women who had a spontaneous abortion required a blood transfusion. One in ten women with induced abortions had abdominal surgery.

Two-thirds of the women with induced abortion complications stayed at least one day in the hospital, and 7% stayed 10 or more days. Only about half of the spontaneous abortion patients stayed overnight. The mean number of days spent at a hospital for the treatment of an induced abortion was 2.9, which was 60% higher than the 1.8 mean of days spent at a hospital for the treatment of a spontaneous abortion.

Out-of-pocket costs for women presenting for abortion complications

The cost borne by the patients themselves for the treatment of complications from an induced abortion, as estimated by providers, is shown in Table 4.3. The greatest expense, averaging 8,391 Naira ($70), is the total hospital cost that the woman was charged. Fourteen percent of women were charged less than 1000 Naira ($8), and slightly over one in five was charged 10,000 or more Naira ($83+).

Additional expenses incurred for the purchase of supplies averaged 4,490 Naira ($37), with 42% of providers indicating that women paid less than 1000 Naira ($8) and 19% estimating that women paid 5000 ($42) or more Naira. Over a third of women had to pay for additional medication, and these costs averaged 4,702 Naira ($39). The majority of costs were under 2500 ($21) Naira, but over one in ten paid 10,000 ($83) or more Naira.

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19 Calculated at the rate of 120 Naira to US$1 the exchange rate for 2002, the year in which the HBS and CBS surveys were carried out.

20 Averages for total expenses are based on the number of providers who gave an estimate of cost.
Table 4.3. Amount paid, in Naira*, for treatment by women presenting for abortion complications, Nigeria, Hospital Based Study of Unwanted Pregnancy, 2002-2003

<table>
<thead>
<tr>
<th>Type of expense</th>
<th>Induced abortion outside hospital, complications treated</th>
<th>Total</th>
<th>North</th>
<th>South</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Charges in hospital</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (unweighted)†</td>
<td></td>
<td>494</td>
<td>240</td>
<td>252</td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 1000 Naira</td>
<td></td>
<td>14.4</td>
<td>22.5</td>
<td>6.7</td>
</tr>
<tr>
<td>1000-2499 Naira</td>
<td></td>
<td>19.4</td>
<td>14.2</td>
<td>24.2</td>
</tr>
<tr>
<td>2500-3999 Naira</td>
<td></td>
<td>18.6</td>
<td>17.9</td>
<td>19.0</td>
</tr>
<tr>
<td>4000-5499 Naira</td>
<td></td>
<td>7.1</td>
<td>10.0</td>
<td>4.4</td>
</tr>
<tr>
<td>5000-9999 Naira</td>
<td></td>
<td>17.6</td>
<td>16.3</td>
<td>19.0</td>
</tr>
<tr>
<td>10,000+ Naira</td>
<td></td>
<td>22.9</td>
<td>19.2</td>
<td>26.6</td>
</tr>
<tr>
<td>Mean hospital charges</td>
<td></td>
<td>8,391</td>
<td>6,037</td>
<td>10,679</td>
</tr>
<tr>
<td><strong>Additional expenses</strong>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supplies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (unweighted)</td>
<td></td>
<td>129</td>
<td>57</td>
<td>72</td>
</tr>
<tr>
<td>less than 1000 Naira</td>
<td></td>
<td>41.9</td>
<td>89.5</td>
<td>4.2</td>
</tr>
<tr>
<td>1000-2499 Naira</td>
<td></td>
<td>10.1</td>
<td>7.0</td>
<td>12.5</td>
</tr>
<tr>
<td>2500-3999 Naira</td>
<td></td>
<td>25.6</td>
<td>1.8</td>
<td>44.4</td>
</tr>
<tr>
<td>4000-5499 Naira</td>
<td></td>
<td>3.9</td>
<td>1.8</td>
<td>5.6</td>
</tr>
<tr>
<td>5000-9999 Naira</td>
<td></td>
<td>3.1</td>
<td>0.0</td>
<td>5.6</td>
</tr>
<tr>
<td>10,000+ Naira</td>
<td></td>
<td>15.5</td>
<td>0.0</td>
<td>27.8</td>
</tr>
<tr>
<td>Mean additional supplies' expenses</td>
<td></td>
<td>4,490</td>
<td>537</td>
<td>7,619</td>
</tr>
<tr>
<td><strong>Medications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (unweighted)</td>
<td></td>
<td>203</td>
<td>120</td>
<td>83</td>
</tr>
<tr>
<td>less than 1000 Naira</td>
<td></td>
<td>39.4</td>
<td>60.8</td>
<td>8.4</td>
</tr>
<tr>
<td>1000-2499 Naira</td>
<td></td>
<td>26.1</td>
<td>30.8</td>
<td>19.3</td>
</tr>
<tr>
<td>2500-3999 Naira</td>
<td></td>
<td>8.4</td>
<td>5.8</td>
<td>12.0</td>
</tr>
<tr>
<td>4000-5499 Naira</td>
<td></td>
<td>6.9</td>
<td>1.7</td>
<td>14.5</td>
</tr>
<tr>
<td>5000-9999 Naira</td>
<td></td>
<td>5.4</td>
<td>0.0</td>
<td>13.3</td>
</tr>
<tr>
<td>10,000+ Naira</td>
<td></td>
<td>13.8</td>
<td>0.8</td>
<td>32.5</td>
</tr>
<tr>
<td>Mean additional medications' expenses</td>
<td></td>
<td>4,702</td>
<td>1,143</td>
<td>9,849</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (unweighted)</td>
<td></td>
<td>494</td>
<td>240</td>
<td>252</td>
</tr>
<tr>
<td>less than 1000 Naira</td>
<td></td>
<td>5.7</td>
<td>5.8</td>
<td>5.6</td>
</tr>
<tr>
<td>1000-2499 Naira</td>
<td></td>
<td>23.7</td>
<td>24.6</td>
<td>22.6</td>
</tr>
<tr>
<td>2500-3999 Naira</td>
<td></td>
<td>18.4</td>
<td>18.8</td>
<td>17.9</td>
</tr>
<tr>
<td>4000-5499 Naira</td>
<td></td>
<td>6.9</td>
<td>11.3</td>
<td>2.8</td>
</tr>
<tr>
<td>5000-9999 Naira</td>
<td></td>
<td>15.6</td>
<td>17.9</td>
<td>13.5</td>
</tr>
<tr>
<td>10,000+ Naira</td>
<td></td>
<td>29.8</td>
<td>21.7</td>
<td>37.7</td>
</tr>
<tr>
<td>Mean total cost</td>
<td></td>
<td>11,356</td>
<td>6,736</td>
<td>15,828</td>
</tr>
<tr>
<td>$ equivalent</td>
<td></td>
<td>95</td>
<td>56</td>
<td>132</td>
</tr>
</tbody>
</table>

† A total of 22 cases are missing. For region, a total of 2 cases are missing.
* $1 dollar=120 Naira
** Results averaged for those who incurred each type of additional expense.
The total average expense,\textsuperscript{21} based on the hospital charge and all additional expenses\textsuperscript{22} that women incurred for the treatment of an induced abortion was 11,356 Naira ($95). One in three women spent 10,000 ($83+) or more Naira, 24% spent between 1000 ($8) and 2499 Naira ($21) and 18% spent between 2500 ($21) and 3999 Naira ($33).

Overall, and for each measure of cost, women in the South paid a much higher amount for treatment than women in the North. While these charges are quite high, it is likely that they do not reflect the full cost of care, particularly within public sector or charitable facilities (government owned and missionary hospitals), where women are not generally charged the full cost of their care. However data are not available on other cost components. Findings from a community based study conducted around the same time as the study from which this finding derives, and in the same 8 states, help to throw some light onto the reasons for this regional difference in cost. For example, women in the North tend to use less effective (and probably less injurious) abortion methods and are less willing to go to great lengths to get an abortion as compared with women in the South who are highly motivated to terminate an unintended pregnancy (Bankole et al. 2007). Consequently, Northern women tend to present with less severe complications and to receive less serious treatments than their Southern counterparts. In addition, however, there may also be differences in the way hospital patients are charged in the North compared to the South. Charges may be higher in the South since the region is considered more economically developed than the North.

4.3.2. The Mother-Baby Package (MBP)

The World Health Organization’s Safe Motherhood Initiative developed the Mother-Baby Package in 1994 to help countries plan essential interventions to reduce maternal and newborn mortality and morbidity. Later, WHO published a computer-based model, the Mother-Baby Package Costing Spreadsheet (WHO 1999), as an aid to estimating the cost of implementing a set of maternal and newborn health interventions. The package consists of 19 health interventions, one of which is post-abortion care. The MBP was adapted in this study to estimate the total cost to the Nigerian health system of treating post-abortion complications.

The MBP is well suited to this task. The model’s treatment of PAC is extensive, covering management of shock, antibiotic treatment, uterine evacuation/dilatation and curettage, repair of cervical and vaginal lacerations, repair of uterine perforations/hysterectomies and blood transfusions. A three-tiered health system is modelled, including referrals from a lower level to a higher level. Inputs include drugs and supplies, laboratory tests, personnel, overhead, transportation and infrastructure (WHO 1999).

The Mother-Baby Package was used to estimate the total cost of PAC in Nigeria, which includes costs to the country’s health system and out-of-pocket expenses paid for by patients, with the aim of facilitating national strategies and action plans to reduce maternal deaths due to complications of abortion. Although we were able to incorporate

\textsuperscript{21} The distribution and mean of total expenses are based on all respondents (see Table 3 for the number of unweighted cases).
\textsuperscript{22} The additional expenses include payment for doctors (which were reported by nine providers), medications and supplies.
many Nigeria-specific data in the model, a number of MBP default values were also used, which may not accurately reflect Nigerian conditions and result in less precise cost estimates.

**Methodology & assumptions**

The model requires a substantial amount of input information and contains many assumptions dealing with costs, coverage, and amounts of specific inputs needed. All values for the other 18 interventions in the model were taken as given. Although these interventions have no direct bearing on PAC, they do have a small indirect effect over the way the model distributes overhead and capital costs. For instance, if PAC interactions constitute, say, 10% of all health system interactions (visits), then 10% of capital costs are attributed to PAC by the model. Sensitivity analysis showed that very little gain in precision would be achieved by detailed modelling of these other 18 interventions.

The initial setting of the model includes default values for the above-mentioned assumptions based on informed judgements of such values appropriate to a low-income rural environment in a developing country. In applying the MBP to Nigeria, some default settings were accepted without modification. Table 4.4 lists some of the inputs into the MBP model for the purpose of estimating PAC in Nigeria in 2005.
Table 4.4. Inputs into The Mother-Baby-Package for Nigeria

<table>
<thead>
<tr>
<th>Input</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic inputs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population, 2005</td>
<td>131.5 million</td>
<td>UN Population Division</td>
</tr>
<tr>
<td>Crude birth rate (per 1000)</td>
<td>40.8</td>
<td>UN Population Division</td>
</tr>
<tr>
<td>Contraceptive prevalence rate</td>
<td>21%</td>
<td>UN Population Division</td>
</tr>
<tr>
<td>Percent of pregnancies resulting in post-abortion complications</td>
<td>2.8%</td>
<td>Nigeria survey</td>
</tr>
<tr>
<td>Number of post-abortion complications needing care</td>
<td>185,000</td>
<td>Nigeria survey</td>
</tr>
<tr>
<td>Number of post-abortion complications receiving care</td>
<td>74,000</td>
<td>Nigeria survey</td>
</tr>
<tr>
<td>Personnel salaries (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary/Attendant</td>
<td>$1,493</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Nurse/Midwife</td>
<td>$2,127</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>General Physician</td>
<td>$5,652</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Obstetrician</td>
<td>$9,837</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Paediatrician</td>
<td>$9,837</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Anaesthesist</td>
<td>$9,837</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Lab Technician</td>
<td>$2,127</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Support staff salaries (annual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guard</td>
<td>$1,336</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>$1,153</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Reception</td>
<td>$2,202</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Records</td>
<td>$2,346</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Supply Clerk</td>
<td>$1,828</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Maintenance</td>
<td>$1,227</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Mgmt Officer</td>
<td>$3,002</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Driver</td>
<td>$2,511</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Food Preparer</td>
<td>$1,227</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Health Inspector</td>
<td>$3,175</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Asst Health Inspector</td>
<td>$539</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Health Educator</td>
<td>$3,435</td>
<td>WHO-CHOICE</td>
</tr>
<tr>
<td>Asst Health Educator</td>
<td>$539</td>
<td>WHO-CHOICE</td>
</tr>
</tbody>
</table>

Direct costs

*Drugs and supplies used for treatment.* The information collected from the key informants provided inputs to the MBP for treatment of PAC at different levels of the health system. The various treatment categories were: sepsis, pelvic infection, hemorrhage, retained products, shock, fever and injury. The list of inputs was relevant to
treatment protocols in Nigeria: the informants suggested only minor changes to the list. For example, the data indicate that 70% of women who presented at secondary health care facilities and were diagnosed as cases of sepsis were administered ampicillin injections.

-Personnel time. Estimates of time spent by health care personnel in treating different post-abortion complications were provided by key informants.

--Average length of stay (ALOS) at facility. Data for this parameter are available from the HBS and the key informants. Given that data from the HBS reflect a larger sample, we considered them to be more representative than the estimates provided by the key informants.

--Personnel cost. Salaries are derived from WHO estimates of salaries of health-system personnel. Since the salaries were estimated for the year 2000, they have been adjusted to reflect inflation over the last five years.

--Cost of drugs, supplies and materials. Detailed costs of drugs, supplies and other materials are included in the MBP. The prices in the model have been revised to reflect 2005 international prices (UNFPA, 2005).

Although we did not request key informants to provide cost information, some informants added a cost per case estimate. It is interesting to note, however, that in general the expert informants judged the costs of the inputs to be far higher than the costs available in the MBP and elsewhere. On average, input costs for drugs and supplies at the primary health care level were estimated to be 4.6 times more costly than the MBP prices; at the secondary health care level they were 20 times more costly, and at the tertiary level 45 times more costly. It seems likely, therefore, that on-the-ground costs in Nigeria may be substantially higher than the international prices used in the MBP. If so, the overall cost of treating PAC in Nigeria may be considerably more than what is estimated in this study.

Overhead costs

In the MBP, overhead costs consist of maintenance and utility costs, support staff costs, management/supervision costs and information, education and communication (IEC) costs. Aside from salaries, other inputs to overhead were not modified from their default values.

Capital costs

Capital costs in the MBP include facility construction costs, furniture costs, equipment costs, communications equipment costs, vehicle costs and depreciation rates. WHO default values were used in the Nigerian application of the model.
Demographic and reproductive health indicators

--Demographic data. Demographic indicators (population, crude birth rate and contraceptive prevalence) are taken from United Nations data (United Nations, no date).

--Number of women experiencing post-abortion complications. To get the number of women with post-abortion complications in 2005, an estimate of the national total number of abortions occurring in 2005 was first calculated, projecting forward from the only available prior national estimate, which is for 1996 (Henshaw et al. 1998). The 1996 rate of 25 per 1,000 women 15-49 was applied to the 2005 population of women of reproductive age. So by assuming a stable abortion rate and applying it to a population figure adjusted for growth, abortions in Nigeria in 2005 were estimated to number 740,000. Given that 25% of women who had an abortion reported complications (from the 2002-2003 CBS study); the total number of women experiencing abortion complications and requiring treatment is 185,000.

Given that the number of abortions resulting in complications that require treatment is the most important variable for estimating the total cost of PAC, we present a range of cost estimates based on 95% confidence interval around the estimated proportion of abortions that resulted in serious complications in the 2002-2003 CBS. It should be acknowledged that there may be other variables employed in the model that, if changed, can affect costs substantially. However, we have no way of obtaining confidence intervals around these variables since the model’s default values were used. This is one of the limitations of the study.

--Percentage of women needing care and receiving care at various facility levels. The percentages of cases by level of facility used are: 0% at health posts, 50% at health centers and 50% at hospitals. The CBS survey found that 10% of women who had an abortion sought care afterwards, which means that 74,000 women who reported complications sought treatment; half (37,000) of these women were treated at the hospital level. We categorize the other half (37,000) as having received care in health centers, and we assume that none of the complications were treated in a health post. Although the information collected as indicators of the Nigerian health system’s capacity to provide PAC (see Table 4.5) shows that women can be hospitalized at all three facility levels, we consider only health centers and hospitals as adequate and continual sources of care for women with serious post-abortion complications. Therefore, we operate on the assumption that the 74,000 women went to the highest and the medium level of facilities (of the three levels that the model defines).

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23 An adjustment was also made to take into account the large change in UN estimates of the size of the Nigerian population between 1996 and 2005, given earlier over-estimates of the Nigerian population originating from the 1990 census.
In addition, we separately estimate the costs for the 111,000 women (60%) who are presumed to have experienced complications and needed treatment but who did not receive care. Estimating this cost component separately allows us to draw conclusions about both the current actual post-abortion care that is provided, as well as about the potential cost of meeting the additional medical care needs of the un-served group of women. We assume that the severity of the complications among these women is similar to that of the complications among those who received care. This assumption is based on the expectation that women who need but do not obtain medical care also experience complications ranging in severity, and therefore their care would be distributed between facilities in much the same way as among women who do seek treatment. So, if these women were to receive treatment, we would expect that half of them (55,000) to get it at hospitals and the other half (55,000) to receive care at the secondary level of health centers.
--Proportion of women who experienced different types of abortion complications.
The proportions of women experiencing different types of post-abortion complications are embedded in the MBP model and are based on WHO estimates. These proportions are: 10% of patients require management of shock, 100% antibiotic treatment, 75% uterine evacuation with local anesthesia, 50% repair of cervical and vaginal lacerations with local anesthesia, 10% repair of uterine perforations or hysterectomies (with laparotomy and general anesthesia) and 10% blood transfusions (WHO, 1999). With improvement in medicine since the development of the MBP, some of these proportions may be somewhat lower or higher than is estimated in the MBP. For example, the actual proportion needing repair of cervical and vaginal lacerations with local anesthesia may be lower than 50%. The HBS survey provided empirical information on a few of these types of medical care and comparisons show some similar and some different values between the MBP model and the HBS survey. We chose to use the MBP model for all parameters because they are based on information from the different levels of health facilities while the HBS data are from hospitals.

Sensitivity Analysis

A number of tests were conducted on the MBP to gauge how sensitive the total PAC cost was to changes in various inputs (see Table 4.6).

Table 4.6. Sensitivity Analysis of Mother-Baby-Package

<table>
<thead>
<tr>
<th>Sensitivity Test</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input</td>
</tr>
<tr>
<td>Maintenance/Utility Costs</td>
<td>100%</td>
</tr>
<tr>
<td>Support Staff Costs</td>
<td>100%</td>
</tr>
<tr>
<td>Management/Supervision Costs</td>
<td>100%</td>
</tr>
<tr>
<td>IEC/Social Marketing Costs</td>
<td>100%</td>
</tr>
<tr>
<td>Capital Costs</td>
<td>100%</td>
</tr>
<tr>
<td>Drugs/Supplies for Health Posts</td>
<td>100%</td>
</tr>
</tbody>
</table>

Increasing, for instance, maintenance/utility costs across all facilities by 100% increases the total PAC cost by only 4%. From Table 4.6 we can see that even large changes in overhead and capital costs cause only relatively small changes in the overall estimated cost of PAC.

Results of MBP Application to Nigeria

The results of the application of the Mother-Baby-Package to cases of post-abortion complications in Nigeria are summarized in Table 4.7.
Table 4.7. Estimate of total cost and cost per case of treating post-abortion complications, Nigeria, 2005

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>Cost to Health System</th>
<th>Cost per Case</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower limit</td>
<td>Central Est.</td>
</tr>
<tr>
<td><strong>Cost Category</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Cost</td>
<td>$10,400,000</td>
<td>$13,500,000</td>
</tr>
<tr>
<td>Drugs and Blood Products</td>
<td>$4,100,000</td>
<td>$5,300,000</td>
</tr>
<tr>
<td>Hospital Bed + Food</td>
<td>$600,000</td>
<td>$800,000</td>
</tr>
<tr>
<td>Lab and Other Supplies</td>
<td>$2,500,000</td>
<td>$3,200,000</td>
</tr>
<tr>
<td>Personnel</td>
<td>$3,200,000</td>
<td>$4,200,000</td>
</tr>
<tr>
<td>Overhead Cost</td>
<td>$2,400,000</td>
<td>$3,200,000</td>
</tr>
<tr>
<td>Capital Cost</td>
<td>$1,800,000</td>
<td>$2,400,000</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td>$14,700,000</td>
<td>$19,000,000</td>
</tr>
</tbody>
</table>

Costs in US dollars (2005)

The estimated overall cost to the health system of treating the 185,000 cases—the 111,000 who did not seek treatment together with the 74,000 who did—of women who experienced post-abortion complications ranges from $14.7 million to $23.4 million. The central estimate is $19 million. This total is comprised of $13.5 million for direct costs, $3.2 million for overhead costs and $2.4 million for capital costs. The direct costs are broken down into drugs/blood ($5.3 million), personnel ($4.3 million), supplies ($3.2 million) and hospital stays ($800,000). The cost of medical care for women who actually received post-abortion care (74,000) is 40% of these total costs or $7.6 million, while the remaining $11.4 million of the central estimate is the total cost of care for those women who experience complications and need medical care but do not obtain it.

In 2005, the total government expenditure (recurrent non debt expenditure and capital expenditure) is $543,071,410 (Federal Republic of Nigeria 2005). Expressed as a percentage of the total expenditure on health, the estimated cost of treating complications due to unsafe abortion is 3.5%.

Using the model, the average treatment cost per case for post-abortion care is estimated to be $103, with a range of $79 to $126. For the cases that need hospital-based treatment, the per-case average cost is estimated to be $132. This is an overall estimate that includes both out-of-pocket expenses borne by the woman and expenditures by the health care system. The out-of-pocket expenses estimated from the hospital-based survey are therefore included in the $132 and, to the extent that the two estimates can be compared, the share of the total costs (for hospitalized cases) would be $95 for the woman and $37 for the health system. In this scenario, the woman bears about 70% of the total cost of PAC and the health care system takes on the remaining proportion. The average per case cost at a health center facility is $74, which is almost half of the average cost per case to treat a woman at the hospital level.
4.3.2. Estimating the Cost of Contraceptive Services

This section seeks to answer the question “What would the financial cost be if women with post-abortion complications had used a modern contraceptive method instead?” The methodology employed in making this cost estimate is similar to that used by a recent Guttmacher publication which made contraceptive cost estimates for the whole developing world for 2003 (Vlassoff et al. 2004). The following is a description of the methodology as adapted to Nigeria.

Costing Methodology

Contraceptive method use categories were: female sterilization; modern reversible methods—IUD, long-acting hormonal methods (injectable and implant), the pill, the condom, vaginal barrier methods and spermicides; and traditional methods—periodic abstinence, withdrawal and other non-modern methods. Estimates of current contraceptive use were taken from the 2003 DHS survey in Nigeria (Cleland and Ali, 2003).

The cost of contraceptive services ranges widely across available studies, even within the same country, often reflecting different service settings and differing cost components. The estimates in this report use the average costs available from the UNFPA Costing Initiative database to represent annual cost across all regions (UNFPA 2003). These average costs summarize results from a large number of studies, separating costs for each method into the components: drugs and supplies, labor, overhead (including capital costs, although these are likely to be incompletely reported) and other costs such as hospitalization for tubal ligation. Summary tables of this information are available.

It should be emphasized that, even though these cost estimates are compiled from a set of empirical data based on a comprehensive literature search, they are still rough estimates because they are based on global average cost estimates. They are used due to a lack of appropriate costing data for Nigeria, or indeed for the African region.

The average total costs for counseling and care services per client per year, taken from the above source, are as follows:

---


25 For discussion of methodological details of the cost per case estimates refer in particular to pages 39-40 of the report.
Table 4.8. The Average Annual Cost of Various Modern Contraceptive Methods

<table>
<thead>
<tr>
<th>Contraceptive Service</th>
<th>Average Annual Cost (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Contraceptives</td>
<td>$36.84</td>
</tr>
<tr>
<td>IUDs</td>
<td>$9.09</td>
</tr>
<tr>
<td>Injections/Implants</td>
<td>$31.31</td>
</tr>
<tr>
<td>Condoms</td>
<td>$13.99</td>
</tr>
<tr>
<td>Female Sterilization</td>
<td>$9.15</td>
</tr>
<tr>
<td>Other Modern Methods</td>
<td>$13.99</td>
</tr>
</tbody>
</table>

Note that these costs, taken from the Guttmacher report, reflect 2003 prices. An inflation factor of 1.0594 was used to bring costs, in terms of US dollars, up to 2005.  

Results

An estimated 185,000 Nigerian women who had induced abortions in 2005 suffered health complications as a result. If, instead, these women had used a modern contraceptive method to avoid pregnancy, the health system would have saved their treatment costs, but would have had incurred additional expenditures in providing them with contraceptive services. Assuming that these women would have used different contraceptive methods in the same proportion as Nigerian women who are currently using contraceptives (Table 4.9.), the estimated additional costs are shown in Table 4.10. The total cost of contraceptive services for a one-year period is estimated to be about $4.5 million or about $25 per woman. Given that 750,000 Nigerian women had an abortion in 2005, if all these women were to use modern contraceptives that would help them to prevent the abortion, about $18.8 million would be needed to provide these services.

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26 These average costs are taken from a UNFPA database which is a literature search of empirical studies that report actual service costs. The average costs used here represent averages over all these studies. In modeling, IUDs are usually assumed to offer 3 or more years of protection and female sterilization 8-10 years of protection.

27 The inflation factor was taken from the US consumer price index series. See U.S. Department of Labor web site.
Table 4.9. Family Planning Method Mix, DHS, 2003

<table>
<thead>
<tr>
<th>Method</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of women choosing condoms</td>
<td>14.3%</td>
</tr>
<tr>
<td>Percent of women choosing Depo-Provera</td>
<td>29.7%</td>
</tr>
<tr>
<td>Percent of women choosing IUDs</td>
<td>23.9%</td>
</tr>
<tr>
<td>Percent of women choosing Norplant</td>
<td>0.0%</td>
</tr>
<tr>
<td>Percent of women choosing oral contraceptives</td>
<td>28.6%</td>
</tr>
<tr>
<td>Percent of women choosing sterilization</td>
<td>3.5%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.10. Estimated Cost of Contraceptive Services for Women with Post-Abortion Complications, Nigeria, 2005

<table>
<thead>
<tr>
<th>Component</th>
<th>Cost</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drugs/supplies</td>
<td>$897,000</td>
<td>20%</td>
</tr>
<tr>
<td>Labor</td>
<td>$396,000</td>
<td>9%</td>
</tr>
<tr>
<td>Overhead</td>
<td>$3,242,000</td>
<td>71%</td>
</tr>
<tr>
<td>Total cost</td>
<td>$4,535,000</td>
<td>100%</td>
</tr>
</tbody>
</table>

Ave. cost per user $25

It should be noted that not all women would be protected from the risk of becoming pregnant. With the current mix of contraceptive methods observed in Nigeria, at least 11,900 of the 185,000 women would still become pregnant because of method failure. If all of these 11,900 women then opted to abort their pregnancies, approximately 2,970 of the women would be expected to subsequently suffer post-abortion complications. The total monetary cost for caring for these 2,970 women would be approximately $306,000 (applying the $103 per case cost from the MBP). To compare the cost of providing post-abortion care with the cost of providing contraceptive services to prevent unsafe abortions, the cost of treating the 2,970 women who would experience contraceptive failure needs to be added to the second of the two costs being compared.

4.4. DISCUSSION

Unsafe abortion and its attendant health consequences are a major source of economic stress on the Nigerian society. Complications due to unsafe abortions, an event that can be avoided or at least mitigated, constitute a major source of hospital admissions involving significant expense to women and their families, as well as to the health care system charged with ensuring that women receive the treatment they need. We estimate that 185,000 women had abortion complications in 2005. If all women who experienced complications from induced abortion had received treatment, the total cost for providing
post-abortion care to the women who needed it in 2005 is estimated, based on applying the Mother-Baby Package model, to be $19 million.

Evidence from the HBS shows that women who have an induced abortion under unsafe conditions typically suffer complications that require more elaborate treatment procedures and longer hospital stays than women experiencing a spontaneous abortion. Women with induced abortion complications may tend to not seek care at all or delay seeking care due to stigma or fear, or because they have a less extensive security net to fall back on, causing them to present at a hospital only when they are extremely ill. The severity of complications has an impact on the kind of treatment procedures used and the amount/quantities of resources needed—not just in terms of supplies and drugs but also, for example, in terms of staff time. All of these inputs, which vary according to treatment procedures and protocols, affect the total costs that are incurred to treat women.

Based on the HBS, the total cost to the woman to receive care for post-abortion complications, including hospital charges and additional expenses, averaged 11,365 Naira ($95). This represents a high price to pay given that Nigeria’s per capita income is $930 a year (World Bank 2005). Such high costs of treatment may deter women with complications from seeking care. Furthermore, the amount paid by women and their families is only a portion of the total cost, since the health system also bears some of the cost. These costs constitute a drain on the women’s and the nation’s resources which could have been put to alternate uses. This is particularly deplorable when one considers the fact that unsafe abortion is preventable.

The analysis provides insights into a key issue, that is, the extent to which total cost is shared between the women and their families on the one hand and the health care system on the other. We restricted this part of the analysis to hospital care because we do not know what percentage of the cost of treatment at health centers was paid for by women out-of-pocket. The evidence from hospitals indicates that the majority of the cost of PAC is being absorbed by the woman and her household, as she is paying on average $95 in out-of-pocket expenses out of an average per case cost in a hospital of $132. However, close to a third of the cost of PAC is borne by the health care system. This finding seems to represent a shift from the past in the pattern of health care financing in Nigeria. It used to be that health facilities, particularly government-owned, tended to absorb a larger share of the cost of hospital care. This shift may not be unconnected to the country’s declining economy (Kaduna 2007), which may have led the health care system to try to recover costs, by shifting more of the cost to the patients in order to be able to continue to provide the needed services.

If we compare the cost of treating complications ($19 million) to the cost of providing contraceptive services that would enable women to prevent unwanted pregnancies resulting in abortion ($4.8 million), we obtain a ratio of 4 to 1. In other words, the cost of providing post-abortion care is four times as high as the cost of providing contraceptive services to women who might otherwise experience post-abortion complications. Based on this comparison, it is evident that it would be financially beneficial for policy makers and program planners to mobilize resources on behalf of contraceptive services to prevent
unwanted pregnancy and resulting abortion complications. Investments should be made to expand educational efforts to promote contraceptive use, to improve access to contraception, and to offer an array of methods. Aside from direct monetary cost benefits, improving access to contraceptive services would better the lives of women and their families on many fronts: personal, health, economic and social.

The results from the MBP model offer a conservative estimate of cost and show only one component of all costs associated with unsafe abortion: the medical cost of immediate or short-run post-abortion treatment. Long-term morbidity consequences of complications from unsafe abortion (e.g., infertility and chronic pelvic inflammatory disease), along with the costs associated to treat these conditions, and the social and psychological consequences of unsafe abortion (e.g., stigma) and their associated morbidities have not been measured here. The estimate from this model also does not include broader economic costs, such as the costs to the household, the woman’s lost productivity, and the impact on children and family. The consequences of abortion-related mortality or morbidity to the household and the resulting economic, social and psychological repercussions for the family and society are likely substantially higher than the treatment costs alone.

A major limitation of the costing exercise, undertaken using the MBP, is the lack of country specific data for some of the parameters. Although we attempted to include as many country specific parameters as we were able to obtain, a number of default values were used. The estimate of the cost of providing post-abortion care in Nigeria can be enhanced by including more country specific inputs than we were able to do in this study. Although it is very likely that the model is providing a reasonably accurate estimate of total cost, the true cost of PAC would most likely be higher if more country specific parameters were included. For example, cost estimates of drugs and supplies—one of many parameters that affects the total overall cost—supplied by key informants were significantly higher than the default costs in the MBP model. It is possible that in underestimating the cost of PAC in Nigeria, our study also underestimates the absolute and possibly even the relative share of the total cost that is borne by the health care system. Likewise, estimates of the cost of providing family planning services could also be improved by using more country level information. We, therefore, recommend that in the future those using the model should make it a priority to locate or generate country specific inputs in order to increase the completeness and the accuracy of the estimates.

4.5. IMPLICATIONS

Based on the findings presented above, it is evident that it is far more cost effective to prevent unwanted pregnancy than to try to deal with it through unsafe abortion. However, in Nigeria today, contraceptive use is very low (13% of all sexually active women), and many women who want to delay or stop childbearing are not using an effective method. We, therefore, recommend that immediate actions be taken on both the program and policy fronts to promote the use of effective methods among sexually active women in Nigeria. Measures that should be taken include: implementing information, education and
communication activities aimed at increasing women’s and men’s understanding of the advantages of family planning; increasing knowledge of contraceptive methods and where to obtain them; and combating myths about modern contraception; ensuring adequate supply of and easy accessibility to a variety of modern contraceptives; and delivering adequate training to health care providers at various levels in contraceptive method choice and use counseling.

In addition, since user failure and short continuation rates for most methods are important problems, some women may become pregnant while using contraception or after early abandonment of a method, and some of these women may resort to unsafe induced abortion. It is therefore essential that there be adequate provision of post-abortion care services that include contraception.

Government and private health facilities should be equipped with safe modern methods of treating abortion complications, such as manual vacuum aspiration, which is clinically safer than D&C. Health care providers also need to be trained to perform their duties without being judgmental. The judgmental attitudes of some health care providers are often cited among the reasons women needing treatment do not seek care. As the high cost of obtaining post-abortion care may prevent some women from seeking treatment, post-abortion care services must be made available to women for free or at affordable prices. They should, moreover, include mandatory contraceptive counseling so that women treated for post-abortion complications will understand how to avoid future unwanted pregnancy before leaving the health facility. Program efforts should also be directed at educating women about the serious consequences of not seeking care, and they should be encouraged to seek early treatment for complications.

Unsafe abortion and its associated morbidity and mortality are preventable and present large and unnecessary costs to women and the health care system. Comprehensive family planning services to prevent unwanted pregnancy and reduce unsafe abortion in Nigeria would cost only a quarter of what is being spent in direct costs to treat post-abortion complications. A relatively small proportion of the savings would be needed to implement complementary programs, such as information and education aimed at promoting small family size ideal and the adoption of contraception. If adequately implemented, the savings resulting from the successful unwanted pregnancy prevention strategies could be redirected to meet other needs, including provision of better education and better health care for all.
REFERENCES


World Health Organization (WHO). Website: [http://www3.who.int/whosis/menu.cfm?path=evidence,cea&language=English](http://www3.who.int/whosis/menu.cfm?path=evidence,cea&language=English)

5.1. **BACKGROUND**

In the former Soviet Union, which includes most of the countries in this review, induced abortion had been the principal method of birth control. The reasons for this include the cost of importing modern contraceptives from the West, the poor quality of domestically produced contraceptives, the attitudes of the medical profession toward the oral contraceptive, and the availability of abortion services in the government health service. The decline in the number of children desired, combined with the high failure rates of traditional methods of contraception, resulted in very high abortion rates. In most of these countries, following independence in 1991, abortion rates declined although levels remain high in a few countries. The analysis reported here describes recent trends in conjunction with the increase in reliance on modern contraception. The sources of data are mostly national sample surveys of women of reproductive age conducted by the Demographic and Health Surveys (ORCMACRO) and the Reproductive Health Surveys conducted in collaboration with the Centers for Disease Control.

5.2. **LEVELS AND TRENDS OF CONTRACEPTIVE PREVALENCE AND ABORTION RATES**

**Definitions:**

*Total Abortion Rate:* The number of abortions a woman will have if current rates prevail throughout her reproductive lifetime.

*Abortion Rate:* Yearly number of induced abortions per 1000 women aged 15-44 years.

The most recent estimates of abortion rates are shown in Figure 5.1. There is a wide range of abortion rates in these countries, from rates of less than one abortion per woman in Turkey, Turkmenistan and Uzbekistan to total abortion rates of over three per woman in Azerbaijan and Georgia. The estimate for the United States (Finer and Henshaw 2003) is included in some of these figures, simply to provide some perspective; it is very low by comparison.
There is an important difference between the practice of abortion in these countries and in the United States and other western countries. In the United States, most abortions are of first pregnancies among unmarried women; in Eastern Europe and Central Asia, abortion is used principally by married women to control fertility after one or two births.

The measurement of abortion is a particularly difficult task because of its sensitivity and, in many countries, its legal status. Many different approaches to measurement have been developed, each with its strengths and weaknesses (Rossier 2003; Singh, Henshaw, and Berentsen 2003). In this comparative analysis, we rely mostly on self-reported abortions derived from pregnancy histories collected in personal interviews. Since most of these countries have had decades of experience with legal and widely available abortion and, until recently, a lack of acceptable contraceptive alternatives, there is little stigma associated with the subject and the reporting appears reasonable. In some countries, the level of abortion estimated from the interview data is considerably higher than that reported by the Ministry of Health from registered data. The situation is further complicated by the increasing involvement of the private sector and mini-abortions that do not get included in official data, a problem that can lead to a mistaken view in some countries that abortion rates have declined rapidly.

The percentage of women in these countries currently using contraception is shown in Figure 5.2, both for all methods combined and for modern methods. The lowest proportions using modern methods are in Azerbaijan, Armenia and Georgia, countries that also show the highest abortion rates. The IUD is the modern method used most frequently in these countries while withdrawal is the most commonly used traditional method.
The association between the prevalence of modern contraception and abortion is displayed in Figure 5.3 for 18 countries in Central Asia and Eastern Europe, plus the United States. There is a very strong negative correlation (-.92) in the expected direction. However, when the prevalence of traditional methods is plotted with abortion rates across the 18 countries, the correlation becomes positive (+.55); the greater the use of such methods (with their higher failure rates), the higher the abortion rates (Figure 5.4).
The recent trends in modern contraceptive prevalence (Figure 5.5) show a rise in all countries except in Russia (Avdeev and Troitskaia 1999; Avdeev 2003) where the upward movement appears to level off after 1996. Some of these increases are quite dramatic, with prevalence rising 1%–2% per year. There is some speculation that the
plateau in Russia resulted from government concerns about low fertility that translated into the Health Ministry abandoning its sex education plans and widespread layoffs in the Moscow offices of contraceptive manufacturers. Evidently, this reaction has subsided and contraceptive sales began to increase again after 2000 (Zhurnal 2003; Bellaby 2003). Aside from this, the plateau no doubt underestimates the increase in prevalence because the measure only includes the IUD and hormonal methods. In particular, surgical sterilization, which had been increasing, is excluded after 1997.

Figure 5.5. Recent trends in the use of modern contraception


The trends in abortion rates during the most recent 5-6 years generally indicate a downward trajectory (Figure 5.6). There are several exceptions to this picture of declining abortion rates that will be discussed below.

Figure 5.6. Recent trends in abortion rates

5.3. TRENDS IN FERTILITY RATES AND NUMBER OF CHILDREN DESIRED

To understand the prevalence of contraception and abortion, it is necessary to consider the number of children that couples are aiming for (Bongaarts and Westoff 2000). The smaller this “fertility target,” the more likely that couples will practice some form of birth control. The alternative would be high levels of unwanted births and unmet need for family planning. If couples are aiming for only one or two children over a period of say 20 years, the long exposure to the risk of an unwanted pregnancy presents a considerable challenge to fertility regulation.

The trends in actual fertility (Figure 5.7) dramatically indicate the rapid emergence of the small-family norm in these 12 countries. In 7 of the 12, the total fertility rate has declined from a range of 3 to 5 births per woman in 1950-55 to between 1 and 2 births in 1995-2000. In the other 5 countries, the decline has been from between 4 and 7 births to between 2 and 3. These sharp declines are clear evidence that couples in these countries now prefer very few children. There is, of course, the possibility that the number of children preferred is greater than the observed fertility rates as a result of the postponement of births. Although it may be that couples prefer more children than they are having, it is also true that actual fertility rates may exceed the levels that would exist if only wanted births occurred.

![Figure 5.7. Total Fertility Rates (TFR) 1950-2000](image)


Direct measures of these preferences are only available from estimates derived mostly from recent single surveys. An indirect approach to assessing time trends in reproductive preferences is shown in Figure 5.8 where the mean ideal number of children is tabulated by the current age of women. The assumption is that the ideal number reported by women in their 40s compared with younger women reveals a time trend in the norm. There are problems with such a measure, including the likely rationalization of unwanted births as wanted, but it is the only measure available. The progressive declines in the ideal
The ideal number at each younger age category are clearly evident; it is especially pronounced for Turkmenistan, Kyrgyzstan, and Uzbekistan. In Turkmenistan, the ideal number reported by women 45-49 is 4.6 children in contrast to 2.6 by women 15-19. All of the other countries show ideal numbers under three children, with an average that reaches as low as 1.7 in Ukraine.

**Figure 5.8. Mean ideal number of children, by current age of woman**

![Graph showing mean ideal number of children by current age of woman for various countries.](image)


Thus, the evidence both from the recorded declines in total fertility rates and from the imputed declines in reproductive norms clearly indicates that fertility goals have become smaller and smaller in recent years. The implication is that the challenge to fertility control has become commensurately greater. As noted above, women in these countries who mostly want no more than two children are confronted with some 20 years of exposure to the risk of unwanted pregnancy.

### 5.4. RECENT COUNTRY TRENDS IN CONTRACEPTIVE PREVALENCE AND ABORTION

The joint recent trends in abortion and modern contraceptive prevalence have been analyzed for each country. In a similar analysis of the relation between abortion and contraceptive prevalence (involving some different countries), Marston and Cleland (2003) show for earlier periods that both abortion and contraception increased simultaneously if contraception was not able to satisfy the growing need for fertility control but the inverse relationship described in this chapter eventually sets in.

Eight of the 12 countries show declines in abortion accompanied by increases in the prevalence of modern contraception; one shows an increase in abortion with little change in contraceptive prevalence (Azerbaijan); two show increases in abortion along with an increase in prevalence but with a dramatic reduction in the ideal number of children (Turkmenistan) or an extremely low ideal number (Ukraine); and one features no net change in abortion rates (Georgia).
5.5. A MODEL OF ABDORTION

Pregnancies that potentially can lead to abortions are mainly either the result of contraceptive failure or are pregnancies to women who did not use contraception but did not intend to become pregnant. The latter category is what is known as the unmet need for family planning. These are the two main sources of abortion though some are also among women who thought they were not exposed to the risk of pregnancy (for reasons of low fecundity or little sexual activity) and some among women who deliberately became pregnant but experienced a change in circumstances, or young women “testing their fertility”: desiring pregnancy but not a child.

In order to quantify the relative proportions of these components to the abortion rate, estimates of contraceptive failure rates, the prevalence of unmet need, low risk and intentional pregnancy along with their associated pregnancy and abortion rates have been calculated for the 12 countries. In each country, the detailed components are estimated from monthly calendar data collected in the interviews. The diagram (Figure 5.9) illustrates the approach with data from the 2000 survey in Armenia. The decomposition is evaluated by how closely the resulting abortion rate approximates the overall rate based on the pregnancy histories collected. The sum of these abortions from each category is 81 per 1,000 women, which is the same as the rate calculated directly. It is clear that reliance on traditional methods contributes disproportionately to the abortion rate in Armenia.
5.6. Components of Abortion in the Countries

As indicated in the model illustration for Armenia, nearly 60% of abortions in that country were the result of contraceptive failure, mainly traditional methods. Among non-users, unmet need was the principal source of abortions, contributing 30% of all abortions. The remaining 11% originated among other non-users. The distribution of these three categories is shown for the different countries in Figure 5.10.

The countries divide into two groups: eight countries where the main source of abortion is contraceptive failure, and four where the main source is unmet need. This difference is important programmatically. In the first group, the obvious need is to attract couples to methods with low failure rates; in the second category, the challenge is to provide family planning services. In both cases, there seems to be potential demand for greater diversity of modern methods to accommodate different preferences.

5.7. POTENTIAL REDUCTION IN ABORTION RATES

The model illustrated in Figure 5.9 permits the simulation of abortion rates under different assumptions about potential changes in the components. Several simulations are presented.

**Unmet Need Shifts to Modern Method Use**

In this scenario, the assumption is that unmet need is reduced to zero as all women in this category adopt modern contraception. In effect, this is an increase in overall contraceptive prevalence with the further assumption that all of the move is to modern methods. The implications of such a change for the reduction of total abortion rates are

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28 The assumption is made in all of these hypothetical changes that the failure rates and propensities to abort would be the same for the women who move into a particular status as the prevailing rates in that category. To illustrate: women who shift from the use of a traditional method to modern contraceptive use are assumed to practice their new method with the same efficacy as women already in that category.
illustrated in Figure 5.11 for each country. For most of the countries, the implied reduction in abortion levels is around 25%, with an overall average decline of 32%. In Turkmenistan and Uzbekistan, the effect would be greater (a reduction of around half) because in both of these countries the major source of their relatively low abortion rates is unmet need with its attendant high pregnancy rate.

Figure 5.11. Percent reduction in abortion rates if all unmet need shifted to modern methods

![Bar chart showing percent reduction in abortion rates for various countries.](image)


**Traditional Method Use Shifts to Modern Method Use**

Since traditional methods have considerably higher failure rates than modern ones, there is a significant potential reduction of unwanted pregnancy and abortion when women shift from traditional to modern method use. The numerical implications are shown in Figure 5.12. In this scenario, all of the other categories remain at the same level, including unmet need. The effect is equal to associating all current contraceptive use with the failure rate of the current users of modern methods in that country (reflecting both the mix of modern methods and their average failure rate) along with their propensity to have an abortion. The greatest effects are estimated for Azerbaijan, Armenia and Romania; the average reduction for all 12 countries is 23%.
Both Unmet Need and Traditional Method Use Shift to Modern Method Use

The potential combined effect on the abortion rate, if all women shifted from both the unmet need and traditional method use categories to the use of modern methods, is illustrated in Figure 5.13. The estimates are fairly uniform, ranging from reductions of 47% and 48% for Kazakhstan and Ukraine to 63% for Armenia, with an average of 55% for the 12 countries.
5.8. Receptivity to Abortion

In the countries where attitudes toward abortion and contraception were assessed, women were seen generally to be opposed to abortion and to prefer contraception. However, attitudes toward different methods of contraception were very mixed and far from enthusiastic. Moreover, knowledge of modern methods is quite limited in this part of the world. Even the pill is not known by a third of the women in half of the countries, and ignorance of sterilization is widespread. The IUD is the most commonly known method, followed by the condom. Surgical sterilization of women is the least known of these four methods (knowledge of male sterilization is much lower). The high prevalence of traditional methods of contraception in some of these countries and the dominance of the IUD, therefore, seems understandable.

The reliance on abortion in many of these countries, which though declining is still high by international standards, is also undoubtedly related to knowledge of different contraceptive methods. Although women say they much prefer contraception to abortion, there is a strong inclination to regard abortion as a solution to an unwanted pregnancy. One indicator of the propensity to rely on abortion is the high proportion of respondents who say that women who become pregnant unintentionally should seek an abortion. In one set of countries (Azerbaijan, Georgia, Moldova and Romania), about two-thirds of the respondents say that women with an unwanted pregnancy should have an abortion rather than have the child or choose adoption (Figure 5.14). In four other countries, the question was put more directly, and the woman was asked whether she personally would have an abortion if she became unintentionally pregnant. In Armenia, nearly two-thirds said they would have an abortion and in Kazakhstan, Kyrgyzstan, and Turkmenistan, some 40% on average gave this response.

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29 These data could be seriously out of date in a few of these countries in which the surveys were conducted in 1996 and 1997.
Figure 5.14. Percent who feel that a woman with an unwanted pregnancy should have an abortion or who would personally have an abortion*

![Bar chart showing percentages of people who believe a woman should have an abortion or would personally have an abortion in various countries.](chart.png)

*Percent includes half of the women who did not know how they felt or would act under the above circumstances.


It seems clear that unless knowledge and availability of effective and acceptable contraceptive methods increase, abortion rates will remain significant in these countries.

5.9. REMAINING HIGH RISK OF ABORTION

Very high levels of risk for abortion remain in the four countries with the highest overall rates of abortion: Armenia, Azerbaijan, Georgia and Romania. High risk is defined here as women who are married, who want no more children and who are not using a modern method of contraception and who are at risk of an unwanted pregnancy (sexually active and fecund) and who aborted their last pregnancy. The magnitude of this high risk in these four countries ranges from 12% in Romania to 27% in Armenia (Figure 5.15). By definition, all of these women have already had at least one abortion (of their last pregnancy). Without this criterion of having aborted their last pregnancy, the levels of risk range from 27% to 43%.
5.10. CONCLUSIONS

The main conclusion of this chapter is that there is an accumulating amount of international evidence that increasing modern contraceptive prevalence reduces abortion. With only a couple of exceptions, the countries under review here that experienced recent rises in the use of modern contraceptive methods also experienced significant declines in abortion. Despite these declines in abortion, all of these 12 countries showed dramatic reductions of fertility and the number of children desired during the 1990s, which is another demonstration of the increasing role of modern contraception. In contrast, the prevalence of traditional rather than modern methods is associated with higher abortion rates.

The main sources of abortion are contraceptive failure and unmet need for family planning. Contraceptive failure accounts for most of the abortions in two-thirds of the countries, and unmet need is the most important source in the other one-third. Most of the contraceptive failures result from the use of traditional methods.

Based on observed failure rates for the two types of methods and on pregnancy rates for the different types of nonuse and the associated abortion rates for each of these categories, a series of simulation models were developed to illustrate the potential further declines in abortion rates that might be expected if conditions changed. One simulation indicates that if all of the women currently classified as having unmet need or using traditional methods were to join the women using modern methods, the abortion rate could be reduced by an average of 55%. Other simulations isolate the effects of traditional method use and unmet need separately.

Despite an overwhelming stated preference for contraception over abortion, about half to two-thirds of the women say that they would opt for an abortion if they became pregnant unintentionally. There remains, however, a considerable amount of ignorance about modern methods other than the IUD, which is the most commonly used. Given the
widespread continuing decline in the number of children desired, there will be some upward pressure on abortion if the prevalence of modern contraception does not increase. There are four countries—Armenia, Azerbaijan, Georgia, and Romania—in the group that remain at very high risk of abortion.
REFERENCES


**ANNEX 1. COUNTRY CODE LIST**

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CHAPTER 6:
PROVIDER ATTITUDES TOWARDS CONTRACEPTIVE METHODS
AND ABORTION AND COST OF SERVICES IN KAZAKHSTAN

Manju Rani, Shiyan Chao, Gulzada Arystanova and Meruert Radhimova

6.1. INTRODUCTION

6.1.1. Objectives of the Study

The specific objectives of the study can be summarized as:

− To assess the attitudes and perceptions of service providers towards contraception and abortion that may encourage or discourage reliance on abortion as a means of regulating fertility.
− To understand the financing of abortion and family planning services and estimate the public financial burden of avoidable abortion services in Kazakhstan.

6.1.2. The Study Context

Kazakhstan is the fourth most populous former Soviet Republic country with a total population of 14.9 million, 56% of which lives in urban areas. With per capita gross national income of US $ 2250, Kazakhstan falls in the category of lower middle-income countries. Kazakhstan experienced a continual decline in fertility in the 1990s across all social groups, with the total fertility rate declining by 29% from 2.9 in 1988-89 to 2.1 in 1996-99 (Census, 1989 and KDHS, 1999). Contraceptive prevalence (all methods) increased from 59% in 1995 to 66% in 1999 (KDHS, 1995; 1999) with several researchers documenting a decline in reliance on abortion in the 1990s, not only in Kazakhstan but also in other former Soviet States. The total abortion rate per woman in Kazakhstan dropped by almost 18% between 1992-1995 and 1996-1999, from 1.8 abortions to 1.4 abortions per woman (KDHS 95; KDHS 99).
However, the total abortion rate at 1.4 per woman still remains very high, compared to countries with similar or lower fertility levels (e.g. 0.7 per woman in the USA and in the Republic of Turkey) (Westoff 2005). Indeed, the abortion rates as recorded in the Ministry of Health (MOH) database experienced little change between 1996-1999 and between 2002-2004 and remained at around 30 per 1000 women, implying a stagnation in the declining patterns of abortion seen in early 1990s (Figure 6.1).

**Figure 6.2. Trends in percentage of all women (15-49 years) using a modern contraceptive method, between 1995 and 2004**

Similarly, the MOH data on contraceptive prevalence indicate stagnation in the use of contraceptives in the early 2000s (Figure 6.2). The relatively high abortion rates in Kazakhstan suggest that abortion remains an important method of fertility control. Complications resulting from unsafe abortion are a major contributor to maternal mortality and gynecological morbidity (Kaupova et al. 1998). It is estimated that
abortions contribute to 32% of all maternal deaths in Kazakhstan (WHO 1999)\textsuperscript{30} and to 40%–49% of all obstetric and gynecological admissions (UNFPA and WHO 2000).

High abortion rates in the former Soviet states were said to be due to an “abortion culture” perpetuated by State policies which provided free abortion services and limited access to contraceptive alternatives (e.g. pills were declared medically unsuitable until recently; sterilization was permitted only for strictly-defined medical reasons, and available IUDs were outdated technically). The proponents of the idea of an abortion culture argue that abortion is not just a matter of individual choice but is also a social phenomenon, and as such, involves many actors, including the State, service providers, and “society” (Grant 2005). Health providers perpetuated the myth of a State-sponsored abortion culture by withholding information about alternatives or by misinforming clients about family planning methods (Grant 2005).

\textit{Changes in the Fertility Regulation Environment in the 1990s}

However, beginning in the early 1990s, the Kazakhstan government actively sought to increase access to safe and effective modern contraceptive methods (Foreit and McCombie 1995). Under Order 33 of February 1994, a family planning program was approved mandating all medical institutions to provide and massively expand family planning services to help women achieve their desired family size and to reduce abortions and maternal mortality. Kazakhstan now has a national program of family planning with a national advisory group in the form of a coordinating committee on reproductive health within the health committee. Most modern methods of contraception, such as IUDs and injectables, are distributed free of charge in the public sector. Other modern contraceptives, such as the pill and condoms, are also available for a fee at commercial facilities.

To reduce the mortality associated with unsafe abortion, pursuant to an order of the Ministry of Health (2002), the abortion services are provided only through the facilities that have inpatient and emergency, including anesthesia, care. Abortion is available on request during the first 12 weeks of gestation. Thereafter, induced abortion is available within 28 weeks from conception on judicial, genetic, vital, broad medical and social grounds, as well as for personal reasons if authorized by a commission of local physicians. Services for clinical abortions are provided free of charge in most health facilities, though some fee-for-service health facilities have now become available.

\textit{Women’s Response to Changes in Government Policies and Efforts to Improve Contraceptive Services}

The government’s efforts to improve access to contraceptive services played an important role in the decline in abortion rates and increase in contraceptive use in the 1990s, though firm cause and effect relationship cannot be established. The research in the 1990s documented relatively negative attitudes of women towards abortion and an increasing

\textsuperscript{30} Other causes include hypertension (22.3%), toxemia (12.3%), sepsis (9.5%), and ectopic pregnancy (3.9%).
demand for alternative contraceptive services (Agadjanian 2002; Westoff et al. 1998; Westoff 2000; Westoff 2005). In the nationwide Kazakhstan Demographic and Health Survey conducted in 1999 (KDHS 1999), the majority of women (87.9%) reported approval of couples that use family planning methods to avoid unwanted pregnancy. Only 8.5% of women reported approval of unconditional abortion. In the same survey, while almost two-thirds of women (62.7%) felt that getting an abortion for purposes of controlling fertility presented difficulties, a much smaller percentage of women felt that getting IUDs (13.8%) or pills (15.2%) would be a problem. Relatively more respondents perceived financial problems in obtaining services for abortion (54.2%) than for obtaining IUDs (44.2%) and pills (45.7%). Similarly, significantly more respondents perceived health problems/side effects associated with induced abortion (77.3%) than with using IUDs (51.0%) or pills (53.1%).

**Persistent Problems in the Commodity Supply Environment and the Potential for Stagnation in Declining Trends of Abortion Rates**

While the above data reflected a relatively favorable supply environment and attitudes towards contraceptive services, women’s responses on perceived side-effects and reliability of most commonly used methods (i.e. IUD and oral contraceptives) suggested problems still existing on the supply side that may affect the further decline in abortion rates. More than half of the women surveyed perceived health problems/side effects associated with IUDs/pills that would make them reluctant to use these methods. In addition, almost half the women who discontinued using the IUD in the five years prior to the survey (1995–1999) did so due to side effects/health concerns, while 30% of the pill users did so during the same period (KDHS 1999). In addition, almost half of the women surveyed perceived the most commonly prescribed methods as not reliable. The proportion of women who perceived IUDs as reliable was much higher than for pills (64% versus 34%).

In addition to perceptions about side effects and the poor reliability of the most commonly used methods, women’s responses on being informed by health providers about other methods along with the differential rate of stock-out for contraceptive methods in a UNFPA facility survey in 2001 indicated that women had a limited choice of contraceptive methods. For example, only 35% of the women who were currently using a modern contraceptive method were informed by the health provider about other methods of contraception (KDHS 1999). A rapid assessment survey of the health facilities (UNFPA 2001) in five pilot regions revealed that almost all the family doctor outpatient facilities lacked injectables and all Family Group Practices in Astana lacked condoms. A significantly higher proportion of facilities reported stock-outs of injectables and condoms than of oral contraceptives and IUDs. For example, while 75% and 56% of surveyed Family Planning Cabinets reported no injectables and condoms, respectively,

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31 Though surprisingly few women who were not using contraception mentioned cost (0.7%), health concerns (2.4%), fear of side effects (1.6%), or inconvenience of use (0.1%) as the reasons for non-use (KDHS 99).

32 Family Planning Cabinets are clinics at primary health care level, either self-standing or as part of polyclinics specifically designed to deliver outpatient family planning services.
30% reported stock-outs of oral contraceptives as compared with 34% for IUDs. At the level of Central Rayon Hospital (CRH), 79% reported no injectables, 59% no condoms, and 33% reported no oral contraceptives and IUDs.

**Contraceptive Policies and Pronatalist Policies: Striking a Balance**

Also, notwithstanding the current policies of Kazakhstan to improve access to contraceptive services, according to the “Population Policy Data Bank” maintained by the Population Division of the Department for Economic and Social Affairs of the United Nations Secretariat, the Government of Kazakhstan views the current fertility levels as “low.” The Government of Kazakhstan is currently pursuing a policy to increase fertility levels by encouraging women to bear more children. This pronatalist policy may come in conflict with the policy of providing appropriate contraceptive services and may send ambiguous messages to providers. Such conflict is clearly reflected in the lack of any specific budget allocation for family planning services in most of the oblasts and in city health departments. Moreover, contraceptive supplies are not included in the essential drug list, and there are no special funds earmarked for training in the provision of contraceptive services. Most funds are provided either through UNFPA or other national associations (e.g. The Reproduction Center in Almaty). Public advertising of contraceptive methods, unless available over-the-counter, is restricted by an order of the Committee of Pharmaceutical Control (2004).

**Need for Further Research**

The stagnation in the declining patterns of abortion rates and increasing rates of contraceptive use in recent years suggests the need to look for factors contributing to the relatively high abortion rates. Among the different actors—individual choice, State, providers, and society—that may influence the decision to have an abortion, relatively good data representing the views of women and the State, as presented above. However, there is a relative dearth of data on the attitudes and perceptions of actual service providers. This paper specifically tries to fill this empirical gap by assessing the issue of abortion from the point of view of providers.

In addition, though there are many studies from former Soviet States documenting unacceptably high rates of abortion and its impact on women’s reproductive health, especially on maternal mortality, there are few studies that show how the provision of services for avoidable abortion and post-abortion consumes scarce public health resources. Estimates of financial implications of providing avoidable abortion services in place of effective family planning services will inform decisions on policy changes to promote more effective methods of family planning. Cost analysis is particularly valuable now that most of these countries are facing economic crises, rising health care costs, and

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33 Oblast is the first subnational administrative level in Kazakhstan equivalent to province/state in some other countries. There were a total of 14 oblasts in Kazakhstan in 2006. Rayon is the second subnational administrative level equivalent to a district in other countries. There were 220 rayons in Kazakhstan in 2006.
deteriorating resources devoted to health care. This study fills another empirical gap by supplying data on current public sector spending to provide abortion and contraceptive services and costing out each service.

6.2. **STUDY METHODOLOGY**

The primary data were collected to 1) evaluate the providers’ attitudes and perceptions and 2) estimate the cost of abortion and family planning services. The field work was done from July 2005 to September 2005. The findings from the primary data were triangulated with secondary data collected under Kazakhstan Demographic and Health Surveys (KDHS) in mid-1995 and -1999 (KDHS 1995; 1999), and with other existing literature and data to derive the key recommendations and conclusions.

6.2.1. **Sampling**

Three-stage stratified random sampling was used to select the health facilities—the primary sampling units—for this survey. Kazakhstan is divided into six geographical regions which are then administratively divided into 14 oblasts (provinces) and 220 Rayons (districts), in addition to Almaty and Astana City. In stage 1, one oblast with relatively high abortion rates was sampled from each administrative Region (except from Central Region), leading to the selection of four oblasts: South-Kazakhstan; West-Kazakhstan; North-Kazakhstan; and East-Kazakhstan. Since abortion rates vary much more across regions, rather than between oblasts within the same region, this strategy led to a selection of oblasts with high, medium and low abortion rates. In addition, both Almaty and Astana were sampled, at the request of the Ministry of Health. In the second stage, one rural district and one urban district were randomly-sampled from the list of all the rural and urban districts, respectively, in the selected oblasts. Finally, one facility of each type, providing either family planning or abortion or both services was sampled randomly from the list of all the health facilities in that particular district, arranged by the type. A similar approach was used in the urban areas.

**Sampling and Methodology for the Survey of Providers**

At least two service providers involved in providing abortion and/or family planning services were selected from the sampled facilities. In all, data were collected from 126 service providers from 52 health facilities. Structured questionnaires were used to elicit the providers’ responses. Follow-up qualitative questions were asked to gain additional insight into providers’ attitudes. The questionnaires were translated into the local languages and were administered by two trained professionals.
**Sampling and Methodology for Costing Survey**

A structured questionnaire was used to gather costing data on both abortion and family planning services. Costing data on abortion were collected from 20 out of 52 sampled health facilities as only these health facilities provided abortion services, due to a Ministry of Health order stipulating that abortion services be provided exclusively by facilities with inpatient and emergency services. Family planning services, excluding female sterilization, were provided only through the primary health care facilities such as city polyclinics, Family Group Practices, Women Consulting Centers attached to tertiary level institutions, etc. The costs of family planning services were collected from these facilities.

Medical personnel in charge of the provision of abortion and family planning services at the sampled facilities (gynecologists, nurses, midwives, et al.) were interviewed about the current clinical practices followed for abortion (including treatment of abortion complications) and for family planning services.

An accounting model is used to calculate the unit cost of each intervention for both family planning and abortion services.

**Assessment of inputs or cost factors for per intervention cost for abortion services:**

1) **Direct cost**:
   - Drugs: drugs used for local/general anesthesia; antibiotics for prevention of infection; analgesics; uterotonics (e.g. oxytocin); or other products (e.g. IV fluid, blood products).
   - Disposable supplies: gloves, disposable IV sets, syringes, needles, drapes, cotton gauge pieces, cotton, sanitary pads, etc.
   - Antiseptics: for disinfecting clients’ body parts during operation, surgical instruments, and surgeon’s hands.
   - Laboratory tests: standardized cost of carrying out laboratory tests requested before or after the abortion. Some of these tests in the Kazakhstan context included vaginal smear and Wasserman tests for syphilis detection, requested for almost 100% of women.

The quantity of each input required was assessed by asking the respondent staff to identify all the drugs, equipment and supplies used in an intervention. In addition, the respondent was asked to provide an estimate of the percentage of women likely to receive that particular drug/supply (e.g. anesthesia may not be used in 100% of women, which is also true for antibiotics or analgesics).

The accounting department in each health facility was contacted to provide data on prices in the year 2004 for different drugs, laboratory tests and disposable supplies identified earlier as being used for abortion services.

2) **Shared cost of utilities and other miscellaneous costs.** These costs included:
• Utility costs: water and disposal of waste water; heating; electricity; and telephone bills.
• Building and office equipment repair and maintenance.
• Social insurance, social taxes, car insurance, business trips of the staff.

Four steps were followed in calculating the utility and other miscellaneous overhead costs per intervention:

• **Information was collected** on utility and other miscellaneous overhead costs as listed above for one year (generally for the calendar year 2004) from the planning and economics/accounting unit of the health facility.
• **Data were also collected** on the total number of beds in the health facility and the number of beds allocated to the gynecological department (the department responsible for providing abortion services).
• **Calculation of proportion of utility expenses in the gynecology department.** The total utility and other miscellaneous overhead costs of the health facility were prorated to the gynecological department based on the share of gynecological beds to the total number of beds in the health facility.
• **Calculation of proportion of utility and miscellaneous overhead costs attributed to abortion services.** The total utility and miscellaneous costs were then further prorated to abortion services based on the share of admission for abortion services to the total number of gynecological admissions in the same reference period. The cost per intervention was then calculated by dividing the annual utility and miscellaneous costs attributed to abortion services by the total annual number of admissions for abortions.

3) **Shared cost of non-clinical support staff.** The support staff in Kazakhstan health facilities included administrative staff (e.g. statisticians, economists, office clerks, store keepers), and other housekeeping staff (e.g. cleaners, security guards, drivers, plumbers). The steps followed in calculating the shared cost of non-clinical support staff per intervention were the same as described above for utility and miscellaneous overhead costs.

4) **Cost of clinical staff per intervention.** The cost of time spent by all the clinical staff (gynecologist, anesthesiologist, operational nurse, assistant anesthesiologist, and attendant nurse) was calculated based on their monthly salary and time spent on each intervention.

The respondents were asked to provide an estimate of approximate clinical staff time currently spent on an average case for each intervention. For example, for one intervention, an average of one hour of clinical time may be needed, plus the time for pre-abortion and post-abortion counseling (perhaps thirty minutes for each counseling session).

The hourly rate of the clinical staff was calculated by dividing the average monthly salary (according to data provided by the health facility) by the number of working days in a
month (22) and then by the number of working hours in a day (8). This assumed that there was no down-time, and that staff actually worked for all eight hours in a day. The alternative was to allocate the staff-time spent on abortion services, family planning services and all other services, but the first method was used in this study because of difficulties in accurately allocating staff time to different services.

- Costs not included: Most health facilities in Kazakhstan are characterized by overcapacity and are old, with little opportunity cost. Hence, the capital cost of the health facility and equipment is not included in the calculation of cost per intervention.

Assessment of inputs or cost factors for per intervention cost for family planning services:

The same four major categories of inputs as used in assessing the abortion intervention costs were calculated as follows for family planning services:

**Direct costs:** In almost all the facilities visited, most contraceptive supplies (oral contraceptives, IUDs, condoms, injectables, and spermicides) have been supplied by UNFPA under humanitarian aid and were provided supposedly free of charge to the clients who seek services from public health facilities. Therefore, to calculate the cost of providing supplies, the cost of supplies (OCs, condoms, IUDs, Depo-Provera, spermicides) was taken from the data provided by the UNFPA office in Kazakhstan. The cost of one-year couple protection (CYP) was calculated in order to facilitate comparison across methods. For oral contraceptives, it equaled the cost of 12 cycles; for condoms, the cost of 100 condoms; for Depo-Provera, the cost of 4 injections; and for an IUD, it was assumed that on average, a woman will use an IUD for two years. In addition, costs were included for disposable supplies (e.g. gloves and antiseptics for IUDs and Depo-Provera; laboratory tests done before insertion of IUD, etc.).

**Indirect utility and overhead costs:** Annual utility and overhead costs as collected from accounting and planning departments were prorated to total outpatient consultations in a year to calculate the cost for one outpatient consultation. It was assumed that three consultations are required for an IUD and for OCs, four consultations for Depo-Provera and two consultations for condoms. Overall utility and overhead costs were attributed to individual contraceptive methods for one couple per year protection.

**Support staff cost:** Most of the primary care health facilities did not maintain separate data on non-clinical support staff. Based on a ratio of support staff and clinical staff costs in a region from higher-level facilities, a multiplication factor to the direct clinical personnel cost was applied to calculate the support staff cost.

**Direct clinical personnel cost:** Only one staff-member cost was imputed. It was assumed that three consultations per year would be required for oral contraceptives and IUDs (one for insertion and two for follow-up), two consultations per year for condom users and four consultations for Depo-Provera users. The total time allocated for one CYP was 45
minutes for OCs, 30 minutes for condoms, and one hour each for IUDs and Depo-Provera. Depending upon the level of the health facility, the salary of a midwife or gynecologist was taken into account for the calculation of the cost of the clinical personnel time.

For calculation of average cost per intervention for female sterilization, the methodology followed was exactly the same as for abortion. Female sterilization was provided only in tertiary-level facilities with inpatient and emergency facilities.

6.2.2. Estimating Total Public Sector Spending at the National Level

For the sake of comparability, Ministry of Health data were used to estimate the national/oblast incidence of abortion, abortion complications, and use of family planning methods, and were the source for population of women and the total number of births. At the time of field work in July-September 2005, the latest year for which data were available was 2004.

The total public spending (public cost) on each type of intervention was calculated by multiplying the unit cost of each intervention by the total number of interventions performed in each oblast. The total public spending at the national level was adjusted for (weighted for) variations in the unit intervention costs as calculated in the study and for variations in the incidence of abortion in different regions as recorded in the Ministry of Health database.

6.3. RESULTS FROM THE PROVIDER SURVEY: ATTITUDES TOWARDS CONTRACEPTIVE METHODS AND ABORTION SERVICES

Though health facilities were sampled by urban and rural strata in anticipation of rural/urban differences, no significant differences were observed in responses of the providers depending upon whether they served in rural or urban health facilities. Hence, to make the results more readable, findings are presented in aggregate for all the 126 providers surveyed rather than by urban or rural or by level of health facilities.

6.3.1. Provider Bias towards Contraceptive Methods

IUD Perceived to be the Easiest to Use and the most Affordable Method

To assess individual provider attitudes towards nine contraceptive methods, respondents were asked to rate, on a scale of 1-5, each contraceptive according to five criteria: safety; reliability; convenience of use; the probability of their recommending it

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34 These methods included oral pills, condoms, IUDs, injectables, female sterilization, male sterilization, periodic abstinence, withdrawal and induced abortion. However, most respondents were not familiar with male sterilization, hence this method was dropped from the final analysis. Most respondents also replied that they do not consider “induced abortion” to be a family planning method but they were nonetheless asked to provide a rating or give a score of ‘zero.’
as a method, and perceived affordability. If the respondent was not at all familiar with the method, a score of ‘0’ was given. Table 6.1 presents the mean response for different dimensions for all the contraceptive methods. In terms of “safety,” condoms received the highest rating (4.36), followed by oral contraceptives (4.05), female sterilization (3.85), and IUDs (3.31). Abortion (1.48), withdrawal (2.55) and injectables (2.78) were given the lowest scores. In terms of reliability, the highest average score was given to female sterilization (4.51), followed by oral contraceptives (4.45), and IUD/injectables (3.9). As for ease of use, IUDs garnered the highest score (4.5), followed by oral contraceptives (4.0). IUDs, followed by condoms, were perceived to be the most affordable methods.

Table 6.1. The average scores for different contraceptive methods on perceived safety, reliability, ease of use, financial affordability and likelihood of being recommended.

<table>
<thead>
<tr>
<th>Contraceptive method</th>
<th>Safety</th>
<th>Reliability</th>
<th>Ease of use</th>
<th>Affordability</th>
<th>Likelihood of recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Contraceptives</td>
<td>4.05</td>
<td>4.45</td>
<td>3.97</td>
<td>3.50</td>
<td>4.62</td>
</tr>
<tr>
<td>Condoms</td>
<td>4.36</td>
<td>3.49</td>
<td>3.47</td>
<td>4.32</td>
<td>3.75</td>
</tr>
<tr>
<td>IUD</td>
<td>3.31</td>
<td>3.90</td>
<td>4.50</td>
<td>4.63</td>
<td>3.87</td>
</tr>
<tr>
<td>Injectables</td>
<td>2.78</td>
<td>3.91</td>
<td>3.87</td>
<td>3.46</td>
<td>2.60</td>
</tr>
<tr>
<td>Female sterilization</td>
<td>3.83</td>
<td>4.51</td>
<td>3.89</td>
<td>2.13</td>
<td>2.25</td>
</tr>
<tr>
<td>Periodic abstinence</td>
<td>3.24</td>
<td>2.68</td>
<td>2.71</td>
<td>na</td>
<td>2.13</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>2.55</td>
<td>2.08</td>
<td>2.25</td>
<td>na</td>
<td>1.52</td>
</tr>
<tr>
<td>Induced abortion</td>
<td>1.48</td>
<td>2.32</td>
<td>1.52</td>
<td>2.72</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Note: on a scale of 1-5, with 1 representing the worst outcome (least safe/reliable/easy to use/affordable) and 5 representing the best outcome, based on responses of 126 providers.

**Oral Contraceptives and IUDs most likely to be recommended**

As shown in Table 6.1, providers were most likely to recommend oral contraceptives (4.62), even though oral contraceptives were not ranked safest, most reliable, easiest to use or most affordable, followed by IUDs (3.87) and condoms (3.75). These three methods—the most commonly used in Kazakhstan—were the most likely to be recommended by providers in spite of the fact that women surveyed in 1999 (KDHS 1999) perceived them to be associated with health problems and low reliability. Although providers perceived female sterilization as safer than IUDs (3.83 versus 3.31) and almost as reliable and as easy to use as oral contraceptives, the likelihood of their recommending that method was low. Providers also perceived injectables to be much less safe than oral contraceptives and IUDs and were thus much less likely to prescribe them, as compared to oral contraceptives and IUDs. When the providers were further questioned as to why they would not recommend injectables or female sterilization, they had no clear answers; some referred to their lack of training in these methods, and some said that those methods are just “not good” for women. Thus, though injectables and female sterilization are officially available in Kazakhstan, the methods and choices offered to women is limited, for all practical purposes, to oral contraceptives, IUDs and condoms, even though a large percentage of women reported these methods inconvenient and unreliable in KDHS 1999.
6.3.2. Prescription of Contraceptives to Unmarried Young Women and Men: Limited Choice

Recently, an increasing trend has been observed in abortion rates among young single women. To assess providers’ attitudes towards prescribing contraceptive methods to young women and men, two sequential questions were asked. The first question asked whether the respondent would recommend a contraceptive method for young, unmarried, sexually-active women less than 20 years old. If the respondents answered “yes” to this question, then they were asked subsequent questions as to what specific methods they were likely to recommend. The respondents could mention as many methods as they deemed fit. The same two questions were asked regarding young men.

Although almost all providers reported that they would recommend a contraceptive to a young unmarried man or woman, the methods they would recommend remained limited to condoms and oral contraceptives—the two methods with the highest failure rates for typical use (Table 6.2).

<table>
<thead>
<tr>
<th>Contraceptive Method</th>
<th>Recommend to Women</th>
<th>Recommend to Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would not recommend any method</td>
<td>3.2</td>
<td>8.0</td>
</tr>
<tr>
<td>Oral Contraceptives</td>
<td>85.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Condoms</td>
<td>72.2</td>
<td>90.5</td>
</tr>
<tr>
<td>IUD</td>
<td>7.1</td>
<td>0</td>
</tr>
<tr>
<td>Injectables</td>
<td>0.8</td>
<td>0</td>
</tr>
<tr>
<td>Female sterilization</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Male sterilization</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Periodic abstinence</td>
<td>9.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>0.8</td>
<td>0</td>
</tr>
<tr>
<td>Induced abortion</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

6.3.3. Post-abortion Prescription of a Contraceptive Method

Choice Mainly Limited to Oral Contraceptives

To assess current practices and providers’ attitudes towards post-abortion contraceptive services, all respondents were asked to identify the contraceptive method they were most likely to recommend to a woman who had just undergone an induced abortion. “No method” was listed as one of the response categories, and respondents could mention as many methods as they would recommend under different circumstances for women who have undergone an abortion. If the respondent mentioned at least one method, he/she was asked a second follow-up question on how soon they would prescribe a method to a post-abortion client, specifying the exact number of days, weeks or months.
Almost all of the providers said that they would recommend a contraceptive method after providing abortion services. However, while a majority of providers (91%) reported that they would recommend oral contraceptives as a post-abortion method, only 16% of providers mentioned IUDs (Table 6.3).

Table 6.3. Percent of respondents who said that they would recommend a particular method to their clients who have just undergone an abortion.

<table>
<thead>
<tr>
<th>Contraceptive method</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would recommend no method</td>
<td>1.6</td>
</tr>
<tr>
<td>Oral Contraceptives</td>
<td>91.3</td>
</tr>
<tr>
<td>Condoms</td>
<td>26.2</td>
</tr>
<tr>
<td>IUD</td>
<td>15.9</td>
</tr>
<tr>
<td>Injectables</td>
<td>10.3</td>
</tr>
<tr>
<td>Female sterilization</td>
<td>0.0</td>
</tr>
<tr>
<td>Male sterilization</td>
<td>0.0</td>
</tr>
<tr>
<td>Periodic abstinence</td>
<td>4.8</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>0.0</td>
</tr>
<tr>
<td>Induced abortion</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Most providers said that they would recommend a method immediately after the abortion, and only 30% said that they would recommend a method five days or later (Figure 6.3).

6.3.4. Perceptions of Women’s Preferences/Knowledge

Perceived perceptions of their client’s preferences may also bias providers towards recommending/prescribing a particular method. All respondents were asked to give a score on a scale of 1-5 for nine different contraceptives regarding:

- how much the provider thinks the client knows about a method
- how much the provider assumes their clients’ preference for a particular method
In addition, providers were asked about the proportion of their clients who approached them after having made up their minds about a particular contraceptive method. The results are presented in Table 6.4. It is interesting to note that providers perceived clients to be less aware of injectables (2.9) and terminal methods than oral contraceptives, condoms and IUDs. This perception is in line with results of KDHS 99 in which a relatively small proportion of women reported being aware of injectables and female sterilization (53% each), as compared to oral contraceptives (99%), condoms (94%) and IUDs (88%).

Figure 6.4. Percentage of providers who think that almost all/majority of clients approach them after having made up their minds about the contraceptive method they want to use.

Providers also perceived that clients are less likely to prefer injectables, long term and permanent methods—though this lack of preference may be mainly due to their limited knowledge about these methods. In addition, almost 70% of providers thought that almost all or a majority of their clients approach them after having made up their minds about the contraceptive method they want to use (Figure 6.4).

Table 6.4. Providers’ perceptions about clients’ knowledge of and preference for different contraceptive methods.

<table>
<thead>
<tr>
<th>Contraceptive method</th>
<th>Clients’ knowledge</th>
<th>Clients’ preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Contraceptives</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>Condoms</td>
<td>4.7</td>
<td>4.0</td>
</tr>
<tr>
<td>IUDs</td>
<td>4.4</td>
<td>4.3</td>
</tr>
<tr>
<td>Injectables</td>
<td>2.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Female sterilization</td>
<td>2.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Male sterilization</td>
<td>1.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Periodic abstinence</td>
<td>3.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>3.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Induced abortion</td>
<td>3.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Note: On a scale of 1-5; 1 being least likely to know or prefer and 5 being most likely to know or prefer.
6.3.5. Knowledge about Different Contraceptive Methods among Providers

Providers’ knowledge about different contraceptive methods was assessed by asking respondents to list two contraindications and two side effects for each of the nine contraceptive methods. In addition, knowledge about oral contraceptives was assessed by asking them a question about what women should do if they forget to take one pill.

It is interesting to note that almost half of the respondents mentioned menstrual irregularities and increased menstrual bleeding as a side effect of oral contraceptives, which is incorrect. Five (out of 123) also mentioned heavy menstrual bleeding as a contraindication for oral contraceptives. In fact, the opposite is true: oral contraceptives help to reduce menstrual blood loss, make cycles more regular, and reduce the prevalence of iron deficiency anemia. Other important contraindications of oral contraceptives, as mentioned by respondents, include cardiovascular disease (e.g. hypertension), gastrointestinal tract disease, varicose veins (including venous thrombosis or thrombophlebitis), and liver disease (cirrhosis, hepatitis B and C). Obesity, smoking and age over 35 were mentioned by only a few.

For condoms, “allergic reaction” and sexual dissatisfaction were the most common side effect mentioned. Almost four in ten respondents thought that condoms had no side effects and six respondents did not know of any side effects. A majority of the respondents did not mention any contraindications for condoms.

For IUDs, almost all respondents could list at least one contraindication. A majority mentioned chronic inflammatory/infection disease of the genital tract (e.g. adnexitis, cervicitis) and uterine abnormalities (e.g. myoma, scar, cervical erosion). Few mentioned menstrual disorders as a contraindication.

Many respondents were not well-informed on the side effects and contraindications of injectables. A high proportion of respondents mentioned irrelevant contraindications and incorrect side effects. In addition, a significant proportion of respondents were unable to mention any side effects or contraindications. This implies that a majority of the respondents are poorly informed about injectables.

Informing Women about other Contraceptive Methods and Side Effects.

Almost all providers responded that they always inform clients about the potential side effects of the contraceptive methods. In addition, almost all providers said that they would inform clients about other contraceptive methods even when clients request a specific contraceptive method. However, this testimony contrasts sharply with clients’ reports that they are ill-informed about other contraceptive methods, as recorded in KDHS 1999, unless the service situation changed sharply between 1999 and 2005.

6.3.6. Provider Perceptions of the Abortion rate and the Causes of Abortion

The published literature abounds with the view that current abortion rates are high in Kazakhstan. In addition, most of the international agencies working in Kazakhstan and
top policy makers also believe that abortion rates are high. Yet until this study, it was unknown whether providers of abortion also believed this. In order to elicit provider perceptions on abortion rates, all respondents were asked to gauge as “high,” “average” or “low” “the number of women who choose abortion or the number of abortions a woman has on average during her reproductive years.”

As presented in Figure 6.5, almost four in ten providers though that abortion rates in the country were either “low” or “average.” These views contrast with both national and international public health perceptions about abortion rates in the country.

**Figure 6.5. Provider perspectives on the number of women who undergo abortions or the number of abortions per woman on average, as high, low or average.**

![Bar chart showing provider perspectives on abortion rates]

**The Three Most Important Reasons Mentioned by Providers for the High Abortion Rate**

Abundant literature exists describing the reasons given by women for undergoing abortion, and programmatic efforts for reducing abortion have long taken those reasons into account when fashioning strategies for change. But it is also necessary take into account what providers think are the reasons women seek abortions. All providers were asked to list three reasons why women seek abortion. The most common reasons cited are listed in Table 6.5. Social conditions, lack of awareness, financial reasons and the unwanted nature of the pregnancy were the most commonly mentioned reasons for women seeking abortions. Failure to use contraception to prevent pregnancy, incorrect use of contraception leading to high failure rates, and poor accessibility or affordability of contraception were mentioned less often. The remarks included blaming, with many providers mentioning “laziness” and “irresponsible behavior” as reasons for seeking abortion services.

These finding are similar to results from the study sponsored by Schering AG in 2005, involving in-depth interviews with 21 providers (Social and Marketing Research Agency 35 Respondents used the term “social conditions” in a very broad way. On further probing, for most, the term referred to the client’s relationship with her husband, her job or financial situation, etc.)
This study also noted that providers perceive financial concerns, adequate number of children, absence of husband, bad timing of pregnancy, and failure of contraceptive methods to be the most common reasons for women to seek an abortion.

Table 6.5. Providers’ perceptions on why women seek abortions.

<table>
<thead>
<tr>
<th>Reason of abortion</th>
<th>Providers Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social conditions</td>
<td>48</td>
<td>38.1</td>
</tr>
<tr>
<td>Lack of awareness</td>
<td>42</td>
<td>33.3</td>
</tr>
<tr>
<td>Financial reason</td>
<td>38</td>
<td>30.2</td>
</tr>
<tr>
<td>Don’t want a baby due to untimeliness, student, change of status (divorce, partner unwillingness, etc.)</td>
<td>36</td>
<td>28.6</td>
</tr>
<tr>
<td>Irresponsible behavior and lack of concern for health</td>
<td>30</td>
<td>23.8</td>
</tr>
<tr>
<td>Unmarried</td>
<td>25</td>
<td>19.8</td>
</tr>
<tr>
<td>Incorrect use of contraception</td>
<td>22</td>
<td>17.5</td>
</tr>
<tr>
<td>Medical conditions</td>
<td>12</td>
<td>9.5</td>
</tr>
<tr>
<td>Psychologically not ready for a baby</td>
<td>12</td>
<td>8.7</td>
</tr>
<tr>
<td>Lazy</td>
<td>9</td>
<td>7.1</td>
</tr>
<tr>
<td>No use of contraception</td>
<td>8</td>
<td>6.3</td>
</tr>
<tr>
<td>Adolescents</td>
<td>6</td>
<td>4.8</td>
</tr>
<tr>
<td>Affordability of abortion</td>
<td>6</td>
<td>4.8</td>
</tr>
<tr>
<td>Inaccessibility of contraception</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>Failure of contraception</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>3</td>
<td>2.4</td>
</tr>
<tr>
<td>Don’t know FP methods</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Older women</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Short interval between delivery</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Availability of abortion</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Migration</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>Underestimation of side effects of abortion</td>
<td>1</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Note: The total will not add to 126 (the total of respondents), as each respondent was invited to give up to three reasons.

6.4. RESULTS OF COSTING ABORTION SERVICES

6.4.1. Abortion as a Proportion of Total Gynecological Admissions

Calculation of abortions as a proportion of total gynecological admissions was the first step towards calculating the total abortion costs, as some costs (utility and miscellaneous costs, and support staff costs) were calculated for the gynecological department as a whole and then prorated to abortion according to abortion’s share of total gynecological admissions. However, this in itself provided important information, showing how an entire hospital department’s existence depends on the provision of abortion services.
Table 6.6. Percent of admissions for abortion out of total gynecological admissions by geographical regions

<table>
<thead>
<tr>
<th>Region (# of health facility sampled)</th>
<th>% of abortion out of total gynecological admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Kazakhstan (3)</td>
<td>4.9</td>
</tr>
<tr>
<td>East Kazakhstan (5)</td>
<td>28.0</td>
</tr>
<tr>
<td>Astana (Capital City) (3)</td>
<td>26.8</td>
</tr>
<tr>
<td>Almaty (former capital city) (4)</td>
<td>58.9</td>
</tr>
<tr>
<td>West Kazakhstan (2)</td>
<td>37.5</td>
</tr>
<tr>
<td>North Kazakhstan (3)</td>
<td>68.1</td>
</tr>
<tr>
<td><strong>Average for whole country</strong></td>
<td><strong>39.5</strong></td>
</tr>
</tbody>
</table>

This indicator varied from 4.9% in South Kazakhstan, the Region with the lowest abortion rates in the country, to almost 60% in Almaty City (table 6.6). The weighted average\(^{36}\), for the whole country was almost 40%, which is similar to an earlier estimate in a WHO/UNFPA study (UNFPA and WHO 2000).

### 6.4.2. Cost of Abortion Services

Table 6.7 shows the total cost of providing one abortion by geographical region. The lowest costs were observed in Almaty, East Kazakhstan and North Kazakhstan at about US $21 per intervention. The cost was estimated to be about US $29 per intervention in Astana and in West Kazakhstan. The highest cost per intervention was observed in South Kazakhstan at about US $41 per intervention. The average weighted cost for the whole country per intervention was US $26. As mentioned in the methodology, the cost does not include capital costs (construction cost of the health facility or the rent or the capital cost of the equipment). The cost per intervention in Kazakhstan is much lower than in Mexico (Johnson et al., 1993), where it was above US $71, but much higher than in Bangladesh ($3.2 to 7.8), Kenya ($3.3 to 17.2) or Tanzania ($1.9 to $4.75) (Magotti et al. 1995; Johnson et al., 1993; Kay et al. 1991).

Though the cost of personnel is low in Kazakhstan, with an average salary of a mid-career gynecologist varying from $100-$125 per month, it is the shared indirect cost which contributed to a relatively higher cost per intervention, due to the much higher capacity of the systems in terms of hospital beds. The overcapacity of the system also contributed to the higher cost per intervention by increasing the shared cost of support staff (cleaners, security staff, cooks, and administrative staff) per intervention. Recently, efforts were made to rationalize the inpatient admission capacity, but even now it remains on the high side, as compared to other countries with similar development status.

The variation in costs across health facilities and regions was accounted for by differences in clinical practices (e.g. difference in use of antibiotics or anesthesia, or difference in the number and cost of laboratory tests requested). The cost of laboratory tests also varied across different regions and facilities, the reasons for which are not

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\(^{36}\) The weights being the percentage of total gynecological admissions in each Region.
entirely known, though some of the reasons given range from manual output to computerized report, the method of administering tests, etc. The least variation was observed in the clinical staff costs—as there were not substantial differences in the salaries of the clinical staff across the region and across different health facilities.

### Table 6.7. Unit cost of providing abortion services in USD by geographical region.

<table>
<thead>
<tr>
<th>Region (# of health facilities sampled)</th>
<th>Direct cost</th>
<th>Support Staff</th>
<th>Utility and Misc. costs</th>
<th>Clinical personnel</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Kazakhstan (3)</td>
<td>8.7</td>
<td>9.4</td>
<td>21.1</td>
<td>2.3</td>
<td>41.5</td>
</tr>
<tr>
<td>East Kazakhstan (5)</td>
<td>12.8</td>
<td>1.0</td>
<td>5.5</td>
<td>2.0</td>
<td>21.3</td>
</tr>
<tr>
<td>Astana (3)</td>
<td>8.4</td>
<td>6.8</td>
<td>11.4</td>
<td>2.6</td>
<td>29.2</td>
</tr>
<tr>
<td>Almaty (4)</td>
<td>11.7</td>
<td>1.2</td>
<td>6.1</td>
<td>1.7</td>
<td>20.7</td>
</tr>
<tr>
<td>West Kazakhstan (2)</td>
<td>21.1</td>
<td>2.5</td>
<td>4.6</td>
<td>1.7</td>
<td>29.9</td>
</tr>
<tr>
<td>North Kazakhstan (3)</td>
<td>13.1</td>
<td>1.3</td>
<td>4.9</td>
<td>2.0</td>
<td>21.3</td>
</tr>
<tr>
<td>Average for the whole country (20)</td>
<td>12.9</td>
<td>3.0</td>
<td>8.2</td>
<td>2.0</td>
<td>26.1</td>
</tr>
</tbody>
</table>

Note: 1 US $=131.49 Tenge

**Percentage Share of Different Types of Costs**

The direct costs contributed to the highest share of the total costs except in South Kazakhstan (21%) and in Astana (29%). In the other four regions, the share of direct costs ranged from 56% in Almaty to 70% in West Kazakhstan. The second highest share was of utility and miscellaneous overhead costs—ranging from 15% in West Kazakhstan to almost 51% in South Kazakhstan. With few exceptions, the cost of clinical personnel contributed to the smallest share in the overall costs, ranging from 6% in West Kazakhstan to 9% in East and North Kazakhstan.

### Table 6.8. Percent contribution of different cost-constituents to the total cost of one abortion by region.

<table>
<thead>
<tr>
<th>Region (# of health facility sampled)</th>
<th>Direct cost</th>
<th>Support Staff</th>
<th>Utility &amp; Misc. costs</th>
<th>Clinical personnel</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Kazakhstan (3)</td>
<td>20.9</td>
<td>22.7</td>
<td>50.8</td>
<td>5.6</td>
<td>100.0</td>
</tr>
<tr>
<td>East Kazakhstan (5)</td>
<td>60.1</td>
<td>4.7</td>
<td>25.9</td>
<td>9.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Astana (3)</td>
<td>28.7</td>
<td>23.4</td>
<td>39.1</td>
<td>8.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Almaty (4)</td>
<td>56.3</td>
<td>6.0</td>
<td>29.5</td>
<td>8.3</td>
<td>100.0</td>
</tr>
<tr>
<td>West Kazakhstan (2)</td>
<td>70.5</td>
<td>8.3</td>
<td>15.5</td>
<td>5.8</td>
<td>100.0</td>
</tr>
<tr>
<td>North Kazakhstan (3)</td>
<td>61.5</td>
<td>6.3</td>
<td>22.9</td>
<td>9.3</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Average for the whole country (20)</strong></td>
<td>49.5</td>
<td>11.5</td>
<td>31.3</td>
<td>7.7</td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Total Expenditure on Providing Abortion Services

Data were collected from the Ministry of Health on the number of abortions in each oblast. At the time of field work (July–August 2005), the latest year for which data were available was 2004. Table 4.4 provides data on the total number of abortions performed in different regions. Based on these data, excluding capital costs, the Ministry of Health spent US $3.4 million on providing abortion services in 2004. In addition, this cost excludes the cost of treating for abortion complications and the opportunity cost of women’s time spent out of work, including lost wages, child care, psychological stress, etc. It should also be noted that not all abortions were avoidable—these aggregate costs include abortions that might have been spontaneous—on medical or social grounds. Out of the total US $3.4 million, US $1.7 million was spent on direct costs alone (drugs, disposable supplies used) during the intervention (Table 6.9).

Table 6.9. Total public expenditure on providing abortion services (excluding treatment of complications and capital costs) in Kazakhstan (in USD) in 2004.

<table>
<thead>
<tr>
<th>Region</th>
<th>Total number of abortions (2004)*</th>
<th>Total Unit cost</th>
<th>Total cost</th>
<th>Total unit direct cost</th>
<th>Total direct expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almaty City</td>
<td>17,487</td>
<td>20.72</td>
<td>362,331</td>
<td>11.66</td>
<td>203,898</td>
</tr>
<tr>
<td>Astana</td>
<td>8,113</td>
<td>29.18</td>
<td>236,737</td>
<td>8.36</td>
<td>67,825</td>
</tr>
<tr>
<td>South Kazakhstan</td>
<td>20,294</td>
<td>41.46</td>
<td>841,389</td>
<td>8.66</td>
<td>175,746</td>
</tr>
<tr>
<td>West Kazakhstan</td>
<td>17,549</td>
<td>29.94</td>
<td>525,417</td>
<td>21.10</td>
<td>370,284</td>
</tr>
<tr>
<td>Central and East Kazakhstan</td>
<td>33,126</td>
<td>21.28</td>
<td>704,921</td>
<td>12.78</td>
<td>423,350</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>129,467</strong></td>
<td><strong>26.08</strong></td>
<td><strong>3,372,510</strong></td>
<td><strong>12.92</strong></td>
<td><strong>1,673,054</strong></td>
</tr>
</tbody>
</table>

Note: * based on the Ministry of Health Data, 2004.

6.4.3. Cost of Treating Abortion Complications

In 2004, Ministry of Health data recorded a total of 1,826 abortion complications, half of which were recorded as hemorrhage, 23% as post-abortion infection and 24% as other or incomplete evacuation. Nineteen women died as the result of abortion complications (MOH 2004), yielding a maternal mortality ratio of 11.33 per 100,000 live births. This rate accounts for 26% of the total maternal mortality rate as recorded by the Ministry of Health in 2004.

Table 6.10 provides the total public sector expenditure by type of abortion complication. The cost for one treatment intervention by type of abortion complication was calculated as the weighted average across different regions. A total of US $108,197 was spent on the treatment of acute abortion complications, excluding the treatment of the women who eventually died. These costs do not include the opportunity cost of women’s time spent in hospitalization or the cost of any chronic complications such as infertility or chronic pelvic inflammatory diseases. Finally, there is a high likelihood of underestimation of
abortion complications in the Ministry of Health data base, as complications adversely affect the evaluation given to the performance of a provider/facility, and therefore are less likely to be reported. Thus, these costs may then be underestimated.

**Table 6.10. Cost per intervention and total spending on treatment of abortion complications in 2004.**

<table>
<thead>
<tr>
<th>Type of abortion complication</th>
<th>Number*</th>
<th>Cost per intervention (US $)</th>
<th>Total cost (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uterine/cervix perforation</td>
<td>68</td>
<td>57.5</td>
<td>3,911.4</td>
</tr>
<tr>
<td>Bleeding</td>
<td>812</td>
<td>72.7</td>
<td>59,032.4</td>
</tr>
<tr>
<td>Infection</td>
<td>458</td>
<td>49.9</td>
<td>22,854.2</td>
</tr>
<tr>
<td>Other (incomplete evacuation)</td>
<td>488</td>
<td>45.9</td>
<td>22,399.2</td>
</tr>
<tr>
<td>Total</td>
<td>1826</td>
<td>59.3</td>
<td>108,197.2</td>
</tr>
</tbody>
</table>

*source of data: MOH (2004)

6.4.4. **Public Spending on Abortion Services as a Proportion of Total Public Spending on Health**

As per the World Development Indicators database maintained by the World Bank, the total per capita public sector spending on health in 2002 at current prices was US$29, which was 53.2% of total per capita health spending at $56 (World Bank 2005). Based on these estimates of public health spending and assuming these estimates did not change significantly in 2004 (the year for which abortion cost estimates were made), the public spending on abortion services was almost 1% of total public health spending (Table 4.6). Even these costs, as discussed in previous sections, are likely to underestimate the total burden on public health resources, as this study used MOH data to estimate the number of abortions, abortion complications, and abortion related mortality, which are likely to be under-reported in the MOH data base. In addition, these costs do not take into account the capital costs of health facilities and the other costs borne by the women.

**Table 6.11. Total public spending on abortion as proportion of total public sector spending on health**

| Total public sector expenditure per capita (2002) | US$ 29  |
| Total population in 2004                       | 14,909,018 |
| Total spending on abortion                     | US $ 3,409,283 |
| Total public spending on abortion as % of total Health expenditure | 0.8% |

6.5. **RESULTS OF THE COSTS OF FAMILY PLANNING SERVICES**

Table 6.12 presents the costing estimates for one couple per year protection by different contraceptive methods. Since the cost of oral contraceptives can vary greatly by the brand used, in the calculation presented below, the cost of one cycle of Rigevidon FE ($0.175) and Tri-Regol FE ($0.19 per cycle)—the two brands procured and supplied by UNFPA in
2003—were taken into account. Similarly, for the IUD, the cost of Copper T 380A ($0.414), manufactured by CONTECH Devices Pvt., LTD. and supplied by UNFPA, was used. The cost of one condom supplied by UNFPA was US $0.02.

The results presented below show that the cost of one year of couple protection ranges from US $3.66 for condoms to US $8.01 for female sterilization. The cost for oral contraceptives, IUDs, and Depo-Provera injections are US $4.59, 5.85 and 7.43, respectively.

Table 6.12. Cost of one couple year protection for different contraceptive methods by region in USD.

<table>
<thead>
<tr>
<th>Region</th>
<th>OC</th>
<th>Condom</th>
<th>IUD*</th>
<th>Depo-Provera</th>
<th>Female sterilization*</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Kazakhstan</td>
<td>4.96</td>
<td>3.84</td>
<td>5.73</td>
<td>7.61</td>
<td>8.01</td>
</tr>
<tr>
<td>East Kazakhstan</td>
<td>4.65</td>
<td>3.64</td>
<td>5.34</td>
<td>7.20</td>
<td>7.31</td>
</tr>
<tr>
<td>Astana</td>
<td>4.05</td>
<td>3.34</td>
<td>6.41</td>
<td>6.60</td>
<td>8.57</td>
</tr>
<tr>
<td>Almaty</td>
<td>5.46</td>
<td>4.05</td>
<td>7.47</td>
<td>8.02</td>
<td>9.26</td>
</tr>
<tr>
<td>West Kazakhstan</td>
<td>4.22</td>
<td>3.43</td>
<td>6.41</td>
<td>6.79</td>
<td>8.01</td>
</tr>
<tr>
<td>North Kazakhstan</td>
<td>4.16</td>
<td>3.4</td>
<td>5.69</td>
<td>6.72</td>
<td>7.47</td>
</tr>
<tr>
<td>Average</td>
<td>4.59</td>
<td>3.66</td>
<td>5.85</td>
<td>7.43</td>
<td>8.01</td>
</tr>
</tbody>
</table>

Note: for IUD, an average year of protection is taken to be two years, and for female sterilization, it is assumed that one intervention confers seven years of protection, given that in Kazakhstan, female sterilization is not offered before the age of 35 years.

Total costs incurred by the public sector in 2004: According to Ministry of Health data, there were 1,641,358 users of modern methods of contraceptives, excluding the users of female sterilization. The total population of women in 15-49 year age group in Ministry of Health data was 4,273,762. This gave a modern method contraceptive prevalence rate of 38.4%, almost the same as observed in DHS, 1999 (38.6%).

Tables 6.13.1 and 6.13.2 give the total cost of contraceptive services in 2004 measured in couple year protection.
Table 6.13.1. Total public sector expenditure on oral contraceptive and condom users in 2004.

<table>
<thead>
<tr>
<th>Region</th>
<th>Oral contraceptives</th>
<th>Condoms</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost (US $)</td>
<td>Users (MOH 2004)</td>
<td>Total cost (US $)</td>
<td>Cost (US $)</td>
<td>Users (MOH 2004)</td>
</tr>
<tr>
<td>South Kazakhstan</td>
<td>4.96</td>
<td>49,839</td>
<td>247,201.4</td>
<td>3.84</td>
<td>37,983</td>
</tr>
<tr>
<td>East Kazakhstan</td>
<td>4.65</td>
<td>64,166</td>
<td>298,371.9</td>
<td>3.64</td>
<td>100,165</td>
</tr>
<tr>
<td>Astana</td>
<td>4.05</td>
<td>23,066</td>
<td>93,417.3</td>
<td>3.34</td>
<td>12,265</td>
</tr>
<tr>
<td>Almaty</td>
<td>5.46</td>
<td>39,667</td>
<td>216,581.8</td>
<td>4.05</td>
<td>11,062</td>
</tr>
<tr>
<td>West Kazakhstan</td>
<td>4.22</td>
<td>26,622</td>
<td>112,344.8</td>
<td>3.43</td>
<td>28,468</td>
</tr>
<tr>
<td>North Kazakhstan</td>
<td>4.16</td>
<td>81,038</td>
<td>337,118.1</td>
<td>3.40</td>
<td>89,268</td>
</tr>
<tr>
<td>National Average/Total</td>
<td>4.59</td>
<td>284,398</td>
<td>1,305,035</td>
<td>3.57</td>
<td>279,211</td>
</tr>
</tbody>
</table>

Table 6.13.2. Total public sector expenditure on IUD and Depo-Provera users in 2004.

<table>
<thead>
<tr>
<th>Region</th>
<th>IUD</th>
<th>Depo-Provera</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost (US $)</td>
<td>Users (MOH 2004)</td>
<td>Total cost (US $)</td>
<td>Cost (US $)</td>
<td>Users (MOH 2004)</td>
</tr>
<tr>
<td>South Kazakhstan</td>
<td>5.73</td>
<td>370,882</td>
<td>2,125,154</td>
<td>7.61</td>
<td>15,943</td>
</tr>
<tr>
<td>East Kazakhstan</td>
<td>5.34</td>
<td>158,269</td>
<td>845,156.5</td>
<td>7.20</td>
<td>6,078</td>
</tr>
<tr>
<td>Astana</td>
<td>6.41</td>
<td>23,266</td>
<td>149,135.1</td>
<td>6.60</td>
<td>382</td>
</tr>
<tr>
<td>Almaty</td>
<td>7.47</td>
<td>34,191</td>
<td>255,406.8</td>
<td>8.02</td>
<td>4,086</td>
</tr>
<tr>
<td>West Kazakhstan</td>
<td>6.41</td>
<td>131,497</td>
<td>842,895.8</td>
<td>6.79</td>
<td>1,107</td>
</tr>
<tr>
<td>North Kazakhstan</td>
<td>5.69</td>
<td>244,508</td>
<td>1,391,251</td>
<td>6.72</td>
<td>2,574</td>
</tr>
<tr>
<td>National Average/Total</td>
<td>5.85</td>
<td>962,613</td>
<td>5,608,998</td>
<td>7.43</td>
<td>30,170</td>
</tr>
</tbody>
</table>

Ministry of Health data did not provide information on the recipients of female sterilization. Based on KDHS 1999, in which 2% of women 15–49 years old were using female sterilization, it was estimated that 86,094 women used female sterilization, which gives the total cost of US $ 689,982 for 86,094 couple years of protection.

Aggregating across different contraceptive methods, the total public expenditure was US $ 8.83 million for 1.5 million couple years of protection. This yielded the average cost of $5.37 per couple year of protection on average. The direct cost of commodities accounted for almost 50% of the total cost (except in the case of IUDs). Since all the commodities were supplied by UNFPA, almost 50% of the expenditures were subsidized by humanitarian aid from UNFPA.

6.6. COMPARING THE COST-EFFECTIVENESS OF FAMILY PLANNING SERVICES AND ABORTION

Cost per birth averted or cost per disability adjusted life years (DALY) or quality adjusted life years (QALY) gained may be used to compare the cost-effectiveness of
abortion and family planning services. The latter measures may be useful in assigning priority to interventions. However, the general consensus holds that contraceptive methods (hormonal, barrier, voluntary sterilization, etc.) are preferred to abortion on medical grounds as a means of averting births.

The renewal process model is used to compare the cost-effectiveness of abortion and contraceptive methods in terms of cost per birth averted. The period of infecundity after an abortion is relatively short. Since most abortions in Kazakhstan are performed by 12 weeks, and assuming one month of post-abortion infecundity and six months of “waiting period to contraception,” one abortion will provide contraception for about 10 months. One birth cycle is about twenty-five months (nine months of pregnancy + 10 months of postpartum infecundity\(^{37}\) + six months of waiting period to contraception). This means almost 2.5 abortions (birth cycle/abortion cycle) will be required to avert one birth.\(^{38}\) This means at an average cost of US $26, almost US $65 ($26 x 2.5) will be required to avert one birth (excluding the cost of treatment of abortion complication and maternal deaths). On the other hand, at the cost of US $5.37 per couple year of protection, US $11.2 (cost of contraceptive protection for 25 months = $5.37 x 25/12) will be required to prevent one birth by use of contraceptive methods. However, contraceptive methods do not have 100% use-effectiveness. The average use-effectiveness, estimated as the weighted average of the method-specific use-effectiveness levels,\(^{39}\) with the weights equal to the proportion of women using a given method in 1999 KDHS, in Kazakhstan was 0.91. This average use-effectiveness in a median natural fecundity scenario will lead to pregnancy rate of 18 per 100 women years or 0.18 per woman per year (Bongaarts and Porter 1983). Thus, during the use of a contraceptive method during one birth cycle to prevent one birth, there is a 0.36 risk of pregnancy that will be aborted. Thus, including the cost of abortion for 0.36 pregnancy (0.36 x $26 = $9.36), the total cost of contraceptive methods to prevent one birth will be $20.56 ($11.2 + $9.36). This means that the use of contraception as an alternative to abortion to regulate fertility is at least 3.2 times more cost-effective to avert one birth. However, this calculation does not take into account the differential cost of treating complications associated with use of abortion and family planning methods.

### 6.7. Conclusions and Implications

Conclusion # 1

*Access to affordable abortion services alone does not create a so-called “abortion culture.”*

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\(^{37}\) An assumption made in the study; the period will vary across countries depending upon duration of exclusive breastfeeding.


\(^{39}\) The use-effectiveness of individual methods published from a Philippine study (Laing 1978) was used to calculate the average use-effectiveness
Abortion opponents have long pointed to the “abortion culture” and high abortion rates in the former Soviet states as an example of the very humanitarian crisis they wish to avoid. But it is a mistake to assume that access to safe and affordable abortion necessarily leads to high abortion rates. Indeed, empirical evidence suggests otherwise. For example, access to free abortion in France (where the public health insurance system treats abortion as any other medical procedure—so a patient’s costs are almost fully covered) has not lead to increased abortion rates in France (12.4 per 1000 women compared to 30 per 1000 women in Kazakhstan). Similarly in the Netherlands, where abortion does not carry stigma and the costs are covered by national insurance, such policies have not led to the high abortion rates as witnessed in Kazakhstan and other former Soviet states. In addition, the data from KDHS 1999 show parallels in attitudes towards abortion and contraception, thereby throwing into question any straightforward assumptions about the replacement of abortion with contraception (Agadjanian 2002). Use of both abortion and contraception in Kazakhstan is linked to a strong desire to control family size. In Kazakhstan, despite documentation of favorable attitudes towards contraception, and negative attitudes towards abortion, in the absence of quality contraceptive services, abortion rates will remain high.

Restricting abortion services or making them less affordable may not necessarily lead to a decline in the abortion rate, but may in fact lead to an increase in the prevalence of unsafe illegal abortions.

Conclusion # 2

The failure to provide access to convenient, safe, affordable and acceptable choices for family planning methods appears to perpetuate unnecessary reliance on abortion.

It is not easy access to and affordability of abortion services that lead to a high abortion rate, but rather it is the lack of contraceptive choices that perpetuates an “abortion culture.” Though officially, almost all family planning methods are licensed in Kazakhstan (except implants) and available, the results from our study and previous literature suggest that the choice of methods is very much limited to condoms, IUDs, and oral contraceptives. Other methods such as injectables and long term permanent methods (e.g. male and female sterilization) are largely unavailable. A Ministry of Health order dated 7 January 2005 restricted the provision of services for female sterilization as a method of family planning to citizens 35 years or older and who have at least two children. However, results from the providers’ survey suggest that women in this age group are rarely being offered the choice of permanent methods. Most of the respondents interviewed in this study had not received any training in providing female sterilization. Most respondents, even the gynecologists with 25-30 years of service, had never performed a single sterilization procedure. The equipment for performing mini-laparatomy is not available in the majority of hospitals licensed to provide this type of service. Very few providers in our survey indicated that they would recommend this method to their clients, even when the client fulfills the eligibility criteria established by the Ministry of Health.
Similarly, though injectable contraceptive methods have recently been made available in Kazakhstan, accessibility remains limited. Most respondents in our interview were not likely to recommend injectables. Many did not have accurate knowledge of the side effects of injectables. Clients are unlikely to know about them and providers are unlikely to inform them. Further evidence of the inadequate choice of methods is provided by an UNFPA facility survey (a rapid assessment) done in 2001 (UNFPA Study, 2001) as mentioned earlier in section 1.

The data from the provider survey presented in this study can be summarized as a vicious circle of limited method choice initiated by ill-informed and ill-trained providers who pass on limited information to clients. Providers are the only source for the methods not available over the counter, as these methods cannot, by law, be advertised in the mass media. Lack of awareness on the part of clients, in turn, results in lower popular demand for these methods, continuing the vicious circle of limited method choice as shown in Figure 6.6.

**Figure 6.6. Barriers in expansion of method choice: vicious cycle of lack of information**

- **Providers misinformed/not trained**
  - Poor knowledge of methods other than condom, oral contraception and IUD

- **Restriction on mass-media advertisement of non-over-the-counter methods**

- **Communication of limited information to clients**
  - Assumptions about clients’ preference, choice
  - Assumptions about cultural sensitivity
  - Assumptions about ease of use of methods
  - Pronatalist policies

- **Clients less informed and less knowledgeable about certain methods**

- **Less popular demand for particular methods**

- **Private pharmaceutical sector less likely to invest in other methods**
  - Reinforces knowledge of the providers in methods perceived to be popular

- **Older providers biased towards certain methods and not trained, due to old state policies. Young providers also not getting trained due to mentoring by old providers**

Training providers is the first step to expanding the choice of available methods, including correcting misconceptions and increasing awareness about the variety of available methods. Mass media, if the advertising restriction were removed, or other communication methods may be useful. Our study clearly establishes the cost-effectiveness of investment to expand method choice over public spending on abortion.
services. Advocacy to further improve contraceptive services and increase overall contraceptive use is a sound national investment.

Conclusion # 3

Though post-abortion contraceptive services are widely available, the family planning method most commonly recommended post-abortion is oral contraceptives. As women do not perceive this method to be convenient or reliable, provider preference for this method may be contributing to ineffective fertility control.

According to the KDHS 1999, 70% of women 35 years or older who have had an abortion have had more than one abortion, with almost one-fourth of them having had four or more abortions. Many studies have suggested the effectiveness of post-abortion contraceptive counseling and services in preventing repeated abortions and future unwanted pregnancies (Fasuba and Ojo 2004). While almost all providers in our study said that they would recommend a family planning method immediately after abortion, most mentioned only oral contraceptives as the method for post-abortion women. However, many women, as shown in KDHS 99 survey, find oral contraceptives unreliable and inconvenient to use. Because of the division of services—family planning services being provided by primary care health facilities such as Family Group Practices (FGPs) and abortion services by tertiary-level hospitals—most clients, in actual practice, are provided only one cycle of oral contraceptives and sent home or are referred to the adjacent Women Consulting Services for family planning services. There is no way to follow up these clients, and they may be at risk for repeated unwanted pregnancies. IUDs are seldom offered, though there is clear empirical evidence that immediate post-abortion IUD insertion does not carry a risk of higher expulsion rates or higher uterine or other complications than interval insertion (Gocmen et al. 2002; El-Tagy et al. 2003; Grimes et al. 2004; Stanwood et al. 2001; and Moussa 2001). In fact, one study in Turkey (Karabacak 2001) showed that there was a lower continuation rate among women who were offered an injectable method as a post-abortion contraception method than among women who were given an IUD.

Provider misconceptions about the poor safety of an IUD used immediately after an abortion should be corrected through training and continued education. As much as possible, the post-abortion contraceptive method should be provided by the same facility that provided the abortion services. For subsequent follow-up visits, clients may be referred to the primary health care facility.

Conclusion # 4

Service providers may not always consider abortion rates to be as high as observers do and may not perceive abortion rates to be a public health problem.

The discrepancy between the survey data of women who undergo abortions and providers’ perceptions about women who have abortions suggests that providers seldom look at abortion from a public health point of view. They may not try to understand the
underlying reasons for a woman seeking abortion services. An in-depth interview of 21 medical professionals revealed that, according to the respondents, a typical woman who has an abortion is a young unmarried woman of 20-35 years old with low levels of income and education (including a lack of awareness of contraceptive methods) (Social and Marketing Research Agency BRIF Central Asia 2005). However, an analysis of the socio-economic background of women who have undergone abortions does not support that profile (KDHS 1995 and 1999).

Since providers most often encounter individual patients and do not look at the aggregate numbers, the training should apprise them of the aggregate situation and the public health risk of high abortion rates, including abortion rates in other countries with similar or lower fertility levels.

Conclusion # 5

*Substantial financial saving can be realized by reducing the number of abortions.*

Although the resource savings are often calculated in monetary terms, the actual monetary savings may not be apparent because the resources “saved” are often immediately consumed by other operating expenses in a given hospital or health care system. Many institutions delivering reproductive health services operate significantly below their physical capacity, and much of the equipment required for expanding reproductive health services may already be available for use in family planning and other health services. Thus the marginal savings realized from a reduction in providing one type of intervention may be small (Mitchell et al. 1999). For example, a substantial share of the total cost of abortion services is in the form of indirect costs (e.g. facility utility cost and other overhead costs)—which are mainly related to underutilized capacity of the system in Kazakhstan, as reflected in the relatively higher cost of these components per intervention. These costs may only be saved by the overall rationalization of the health infrastructure rather than by a simple reduction of abortion rates. However, when consumption of resources, such as time, space, personnel, drug and supplies, involved in treating incomplete abortions is reduced, these resources may at least be redirected to maternity services, family planning and other obstetric and gynecology needs (Johnson et al. 1993). However, even the direct cost of providing abortion services in the form of drugs and disposable supplies is still high, at about US $1.67 million. Assuming 80% of all abortions were avoidable through more effective delivery of family planning services, the savings would be enough to finance all immunization programs in Kazakhstan or could be directed to providing better family planning services, or towards other public health interventions.

40 Assuming that 20% (WHO) of all abortions are either spontaneous or done on valid medical (e.g malformed fetus) or social (e.g. rape) grounds and were unavoidable.
Conclusion # 6:

*Facility performance evaluation and accreditation strategies should be devised to encourage and motivate staff to provide effective family planning services without necessarily restricting access to safe abortion services.*

The current government policies, designed to increase fertility levels, allocate funds to lower-level health facilities on the basis of the number of abortion procedures conducted. Further, the supply of family planning commodities by the UNFPA under humanitarian aid is not accompanied by sufficient financial or other incentives to lower-level providers aimed at improving the quality of family planning services delivered and reducing the number of abortions. The National Program on Health Sector Reform and Development in the Republic of Kazakhstan (2005-2010) does mention development of a national system for monitoring quality and resource-use-efficiency based on systems of criteria and indicators allowing evaluation of performance and employment of both financial stimulus and punitive tools. It is hoped that this system will motivate providers to deliver more effective and higher quality family planning services to the clients who need them.
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CHAPTER 7:  
A SUMMARY OF FINDINGS AND IMPLICATIONS FOR POLICIES  
AND PROGRAMS

Susheela Singh and Elizabeth Lule

7.1. INTRODUCTION

This report addresses fertility regulation behaviors—contraception and abortion—and their economic, medical and social consequences in two very different contexts, that of Sub-Saharan Africa and Central Asia. It includes case studies of Nigeria and Kazakhstan as well as two regional overviews: a chapter on trends in contraception and abortion in Central Asia and Eastern Europe, and a synthesis of existing evidence on the economic costs of unsafe abortion in Sub-Saharan Africa. Country and regional discussions are preceded and framed by a summary of the global situation, looking at ideal family size, contraceptive prevalence and abortion rates. The report relies on regional and country data to examine trends in fertility regulation behaviors and estimate the costs of these behaviors to women, their families and national health systems. Each chapter highlights several implications for policies and programs, many of which have broad relevance for the two regions as a whole and even the world.

7.2. FERTILITY TRENDS IN THE DEVELOPING WORLD

The need to improve fertility regulation is greatest among poor and rural women in the developing world.

In many parts of the world, the gap between actual fertility and desired family size persists. Even though women are having fewer children, the desired family size continues to decline, and as a result, unplanned births, unintended pregnancies and unmet need for contraception remain high, especially among poor women. As women become better educated, more engaged in the labor market and urbanized, they come to understand that large families are incompatible with the goal of improving their economic circumstances. The need for family planning, which enables women to play a fuller economic and social role in society, is, therefore, high throughout Latin America, Asia and Africa, and in some countries it is still growing. However, various personal and structural barriers prevent women and couples from using contraception successfully. Inadequate access to high-quality contraceptive information and services is an important barrier. When access lags far behind the growing demand for contraception, high levels of unplanned pregnancy and abortion ensue. Identifying this problem is, in and of itself, an important step toward finding the solution.

The global overview of fertility trends and related factors (Chapter 2) documents the higher levels of unmet need for contraception in Africa compared to other major developing regions: 25% of married women of reproductive age in Sub-Saharan Africa
are un-served as compared to 9%–12% in other regions of the developing world. Moreover, while other regions saw a substantial decline, between the early 1990s and the early years of the 21st century, in the proportion of women who have an unmet need for contraception, this decline has been negligible in Sub-Saharan Africa. And in every region of the developing world, this unmet need is much higher among poor women than among those who are better off.

For this reason, it is imperative that policies and programs address the need for contraception globally—for all population groups but with special emphasis on those who are most disadvantaged. An important part of the solution is to expand and improve the provision of high quality contraceptive information and services. This would require that international donors as well as national governments give a higher priority to the provision of contraception in resource allocation, and to identifying and implementing the most effective mechanisms for reaching women who have unmet need. Additional approaches should be considered by countries, depending on their situation, to benefit the poor, such as: community insurance schemes that can reduce out-of-pocket payments, increases in subsidized basic health services, and adjustments to user fee policies.

7.3. NIGERIA AND KAZAKHSTAN: DIFFERENT REGIONS AND SHARED CHALLENGES

While women in both countries have unmet need for contraception and inadequate access to a range of modern methods, the consequences of this, including reliance on abortion to regulate fertility, vary in keeping with the different socio-cultural and demographic contexts

Sub-Saharan Africa is characterized for the most part by low income, low contraceptive use and high fertility, and Central Asia, by medium income, high and still increasing levels of contraceptive use, and moderate and still declining fertility. In Kazakhstan, the official policy is that contraceptive services are provided free, offered as a basic component of reproductive health care; in addition, abortion is legal and the policy is to also provide this service at no cost through government programs. Even though these liberal policies may not be fully implemented, access to affordable contraceptive and abortion services is substantially better in Kazakhstan than in Nigeria. In Nigeria, primary health care services are, by comparison, weak. Abortion is not legally permitted and is often performed in unsafe conditions. The cost of post-abortion care is shared between the patient and the health facilities that offer treatment, mostly in the public health sector, while women and their families also absorb the full cost of the illegal procedure itself.

Modern contraceptive use in Nigeria remains low (8% of married women of childbearing age use a modern method), as compared with Kazakhstan where 54% of women use a modern method. This could reflect the more restricted availability of low-cost, high-quality contraceptive programs in Nigeria. However, as Chapter 2 (Fertility Trends) points out, one explanation for the difference in contraceptive prevalence between the two countries is women in Nigeria say they want far larger families than women in Kazakhstan, and consequently their actual demand for contraception is lower. Women in
Kazakhstan aspire to small families—an average of 2.5 children—while in Nigeria, as in most countries of the Sub-Saharan African region, women want five children on average. The difference in actual family size is also wide: In Kazakhstan, the total fertility rate declined from 4.5 in 1950–1955 to 2.0 by 1995–2000. In contrast, in 2003, Nigerian women were still having an average of 5.7, only slightly down from the 1990 level of 6.0 (Nigeria Demographic and Health Survey 2003). The situation in Nigeria may, in fact, be more complicated than it appears. More work is needed to understand what women’s true family size preferences are, that is, to what extent their childbearing is influenced by others, particularly their partners: married men want 3 children more, on average, than married women, (Nigeria Demographic and Health Survey 2003).

Despite the persistent desire for large families, many women in Sub-Saharan Africa are having more children than they actually want, which means that a substantial proportion of pregnancies are unwanted. This is precisely the situation in Nigeria, where almost one in three women of childbearing age has had an unwanted pregnancy. Half of unplanned pregnancies among Nigerian women aged 15–49 ended in abortion, and 10% of women of childbearing age in that country report that they had undergone an induced abortion, many in highly unsafe circumstances, itself likely to be an underestimate (Bankole et al. 2006). Increasingly, young women want to delay marriage and their first child in order to advance their education. As countries become more urbanized, educated and modernized, couples, too, want smaller families, but effective contraceptive use may not keep pace with these changes.

Effective and consistent contraceptive use is a challenge for women in both countries. In Kazakhstan, women have a limited choice of contraceptives which can, in fact, be costly. Moreover, health providers often misinform women about the side-effects of modern methods. Given the poor quality of information women receive and the limited selection available to them, it is not surprising that they express a high level of dissatisfaction with the most commonly-offered modern methods. In Nigeria, contraceptive services may be difficult, if not impossible for many women to obtain, and the direct and indirect costs of contraceptive use may be even greater than previously thought. Rumors about the supposed ill-effects of most modern contraceptive methods are prevalent in Nigeria and in Kazakhstan, as in most parts of the developing world. Another important barrier in Nigeria and Kazakhstan, (even though use of modern methods is much more common in the latter) to contraceptive use are low levels of knowledge about contraception: About half of all Nigerian adolescents, women with no schooling, and rural residents who had undergone an abortion and were not using any contraceptive method when they became pregnant said that they were unaware of family planning (Bankole et al. 2006).

As a result of the widespread campaigns, undertaken at the time of the 1994 International Conference on Population and Development, to educate the world’s policymakers about equitable and effective reproductive health policies, most government officials (including ministers of finance and health) now understand the importance of providing high-quality contraceptive services. Many have come to accept that such services, besides giving women the means to protect their own health and exercise their reproductive rights, represent an effective and cost-effective way to reduce unwanted pregnancies and
induced abortions, as well as to slow rapid rates of population growth and to lower maternal mortality, one of the millennium development goals.

In both countries, as in every other part of the world, women’s reproductive health can be vastly improved by increasing contraceptive use and reducing abortion rates. While Nigeria and Kazakhstan, and by extension the regions they represent, share certain challenges, their priorities in terms of action vary somewhat. The implications for policy makers and program planners in each of the two countries, and for the many developing countries with similar conditions, are summarized in the next sections.

7.3.1. The Need for Better Information about and Improved Access to Modern Methods of Contraception

In Nigeria, it is essential to improve contraceptive knowledge and access to methods, particularly among young women, if unintended pregnancy and unsafe abortion are to be reduced.

The findings for Nigeria suggest that there is great need for expanded and improved provision of contraceptive information and services to help women delay the first birth, achieve healthy spacing of their births, and avoid unwanted births. At both the policy and the program level, actions must be taken to promote the use of effective methods by sexually active women. Measures that should be taken include: 1) implementing information, education and communication activities to increase women’s and men’s understanding of the advantages of family planning, improve knowledge of contraceptive methods and where to obtain them, and combat myths about modern contraception; 2) ensuring adequate supply and easy accessibility of a variety of modern contraceptives; and 3) providing adequate training to health care providers at various levels on counseling women about choosing a contraceptive method and using it. Health providers need to take seriously women’s susceptibility to adverse information, and find ways to counteract misinformation.

Clearly there is a particular need to improve young people's knowledge about the means of preventing unintended pregnancy (while also dealing with the need to prevent HIV and STIs, which is one of the many reasons for increasing links between HIV and family planning services), and facilitate their access to sexual and reproductive health services (Lloyd 2005 and World Bank 2006). Given the large size of this cohort of adolescents—one billion worldwide—this will be a challenge. Waiting to address this challenge would, of course, be a grave error as many of these adolescents will soon (or already) need to take action to protect their reproductive health and prevent undesirable outcomes.

And up until recently, throughout most of the Sub-Saharan African region, the practice of lengthy breastfeeding and postpartum sexual abstinence helped to lengthen the period of postpartum infecundability and the duration between births. However, with increasing urbanization, modernization and population mobility, these practices are declining. This change imposes the need for maternal and child health services to re-establish exclusive breastfeeding and to educate society at large and couples in particular about the need for
reversible contraceptive methods such as the pill, injectables, and the condom to space wanted pregnancies. Addressing gender inequalities, improving women’s access to education and increasing access to affordable contraceptives and relevant services would also improve their knowledge and health seeking behaviors.

7.3.2. The Relationship between Contraception and Abortion

Results from Kazakhstan suggest that it is not easy access to and affordability of abortion services that lead to a high abortion rate, but rather the failure to provide access to and a choice of convenient, safe and acceptable family planning methods. Even where modern contraceptive use is relatively high, as in Central Asia, failure rates are an important contributor to the high level of induced abortion.

Chapter 5 (Westoff) estimates that between one in five and one in four abortions in Kazakhstan, Kyrgyzstan, Moldova, Turkey, Ukraine, Russia and Uzbekistan are due to the failure of a modern contraceptive method. However, these results also point to the fact that even as contraceptive use increases, the need for abortion services will not totally disappear. In fact, increased use of modern contraception is likely to be associated with a higher proportion of abortions resulting from contraceptive failure (because failure rates can be high and because contraceptive users are generally highly motivated to prevent an unplanned birth), even though the level of abortion may simultaneously decline. In Kazakhstan, where about 54% of married women use modern contraceptive methods, the abortion rate was 48 per 1,000 women aged 15–44 in 1999; in contrast in Nigeria, where contraceptive use is much lower (less than 10%) the abortion rate was an estimated 25 per 1,000 in 1996.

Since user failure for most contraceptive methods is an important factor contributing to unplanned pregnancy, there must be greater emphasis on educating couples about how to use modern methods of birth control regularly and consistently. There should also be adequate health policies guiding the provision of post-abortion care services, including contraceptive counseling for women who become pregnant even while practicing family planning.

7.3.3. Need for Improved Post-abortion Care in Sub-Saharan Africa

The need for comprehensive, high quality post-abortion care remains crucial in Sub-Saharan Africa

Government and private health facilities should be equipped with safe modern methods of treating abortion complications, such as manual vacuum aspiration, and providers need to be trained in the use of these procedures. Post-abortion care should also include mandatory contraceptive counseling so that women treated for post-abortion complications will be well acquainted with how to avoid future unwanted pregnancy before they leave the health facility. The high cost of obtaining post-abortion care may also serve as a deterrent to some women seeking care. Government policies should ensure
that post-abortion services are made available to women at no cost, or at affordable prices.

7.3.4. Contraceptive Services and Counseling as a Component of Post-abortion Care

In Kazakhstan, although post-abortion contraceptive services are widely available, the choice of methods offered is very narrow.

The study results show that almost all providers said that they would recommend a family planning method immediately after abortion, but most mentioned only oral contraceptives as the method offered to post-abortion women. Yet it is well documented in national surveys that women find oral contraceptives unreliable and inconvenient to use. A wider choice of methods would improve the probability of women adopting one and using it correctly and continuously. IUDs are seldom offered, even though, as Chapter 6 (Kazakhstan) documents, there is clear empirical evidence that immediate post-abortion IUD insertion does not carry a higher risk of expulsion or greater risk of uterine or other complications than interval insertion. However, it is important to note as an exception that abortion performed in the second trimester does have a higher expulsion rate (World Health Organization 2000).

Kazakhstan is an example of how provider biases may negatively affect the services that clients receive. For example, providers may have incorrect perceptions about what clients want in terms of contraception; in other cases older providers may know about and provide only certain contraceptive methods, and younger providers may uphold these preferences because they are mentored by older providers. In order to break this pattern and adopt more a client-centered approach, providers need to acquire, through training courses and other means, comprehensive and accurate information about all contraceptive methods. Providers also need to understand the importance of discussing various methods with women and counseling them about choosing the one that best meets their needs. In Kazakhstan and elsewhere, payment or reimbursement systems may result in greater incentives for providing abortion than for providing contraceptive services. Governments and other stakeholders, including professional associations, must examine the way in which existing payment structures work, and determine whether the current system should be modified to better meet the needs of clients.

It is imperative that existing policies be assessed and revised, not only to better meet women's needs, but to address the need for provider education and for adjustment of the current structure of incentives. Providers’ misconceptions about the poor safety of an IUD inserted immediately after an abortion should be corrected through training and continuing education. As far as possible, a contraceptive method should be provided after the abortion procedure by the same facility in which the abortion services are provided. For subsequent follow-up visits, clients may be referred to the primary health care facility or to family planning clinics.
7.3.5. The Importance of Comprehensive Services and Provider Training

In Kazakhstan, the overall system of family planning service provision needs improvement and expansion.

The high abortion rate in Kazakhstan and many of the former Soviet states has often been cited as a negative example or situation to be avoided. As mentioned earlier in this chapter, women’s continued reliance on abortion as a means of fertility regulation stems primarily from poor access to and a limited choice of methods.

Provider incentives and training, too, may influence women’s preference for using abortion as a method of fertility regulation rather than more cost effective contraceptive methods. Though officially, almost all family planning methods except implants are licensed in Kazakhstan and available, the results from the study presented in Chapter 6 and previous literature suggest that the choice of methods is very much limited to condoms, IUDs, and oral contraceptives. Other methods, both for birth spacing (e.g. injectables and Norplant) and to stop childbearing (e.g. male and female sterilization), are largely unavailable. Providers are not likely to recommend these methods, and clients are unlikely to know about them. In addition, ill-informed and ill-trained providers are likely to provide incorrect information to clients. Unreliable supply chains and perceptions of poor quality have also inhibited women’s choices.

A number of different interventions are called for. One recommendation is to support public education campaigns, for example through the mass media, to increase general knowledge about the full range of contraceptive methods. Training providers is another recommended step towards expanding the choice of available methods, correcting misconceptions, increasing awareness about the variety of available methods, and helping women and men choose methods that are appropriate for them. The study in Kazakhstan clearly establishes the cost-effectiveness of investing in a wider choice of methods over public spending on abortion services. Another avenue for increasing effective contraceptive use is to step up investment in developing new contraceptive methods and in improving the quality of available contraceptives and contraceptive delivery systems, in order to provide a wider choice of methods to men and women and minimize contraceptive failure.

7.3.6. Fertility Regulation Behaviors and their Estimated Costs

Contraception is more cost-effective than abortion.

In Nigeria, the cost of contraceptive services to prevent induced abortions was estimated to be $4.5 million. The annual cost of post-abortion care to the Nigerian health care system is an estimated $19 million—about four times the cost of contraceptive services to prevent unsafe abortions—with post-abortion care consuming 3.5% of total health expenditures. Of the $19 million, $7.6 million is for treating women who obtained post-abortion care in hospitals and higher-level health facilities and $11.4 million is for
treating those women who experienced complications but never visited a health facility...

Moreover, this ratio is very conservative because it includes only the direct economic cost of medical care for post-abortion patients, and does not include other costs that may be incurred, for example transportation to a health facility, the cost of additional medications once the woman has left the health facility, and the loss of income and productivity (both by the woman and by her family members). Nor does it include the costs of long-term health consequences and disabilities (for example, chronic pelvic infections and infertility) or the social costs, such as the stigma attached to women who have had an abortion. Furthermore, many of the economic costs are out-of-pocket and, therefore, hit poor women the hardest.

Chapter 6 demonstrated that in Kazakhstan, as in Nigeria, the cost of relying upon abortion to prevent unwanted births is many times the cost of contraceptive supplies to prevent pregnancy. Given the current conditions of healthcare service provision, it is estimated that use of abortion alone to prevent a birth would cost about 14 times as much as contraceptive supplies, which are reportedly donated by UNFPA, for the equivalent protection. Even if the government were to pay for its entire supply of commodities—which account for 50% of the cost of contraceptive care—thereby doubling government expenditures on family planning services, abortion would still cost seven times as much as contraception. In addition, public spending on the direct costs of providing abortion services was almost 1% of total public health spending (not including capital costs and overhead expenses). Assuming 90% of all abortions could be prevented by more effective delivery and use of contraception, the savings would be sufficient to finance all child immunization programs in Kazakhstan.

However, in the case of Kazakhstan, calculation of the costs and benefits of abortion versus contraception should take into account the extent to which institutions delivering reproductive health services operate significantly below their physical capacity. Where a substantial share of the total cost of abortion services is in the form of indirect costs (e.g. facility utility cost and other overhead costs), these costs may only be saved by the overall rationalization of the health infrastructure rather than by simple reduction of abortion rates. On the other hand, however, even the direct cost of providing abortion services is high, accounting for almost 50% of the overall cost of abortion services; and the direct cost would at least be reduced once the number of abortions declined. Another area requiring further research are the out-of-pocket costs incurred by women for contraceptive services and supplies. The estimates presented appear to be based on costs to the public health system for providing all needed services and supplies. However, it is possible that supplies are not always available from the public sector, or may not always be provided free of charge. Women may, in fact, have to pay for some or all of their supplies or services. If so, cost could be an important factor in determining whether they use contraception continuously or experience unintended pregnancies, compelling them to decide whether to have an abortion.

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41 Assuming that 10% of all abortions are done on valid medical (e.g. malformed fetus) or social (e.g. rape) grounds and were unavoidable.
At the global level, family planning, by preventing unplanned births and achieving healthier spacing of births, has been shown to be cost-effective in regard to several outcomes, including: averting unwanted births (cost per births averted ranged between $87 to $163 across developing regions); saving DALYs or disability adjusted life years (cost per DALY saved ranged between $30 and $60; averting infant deaths (cost per infant death averted ranging between $1,367 and $4,907); averting maternal deaths (cost per maternal death averted ranging between $5,172 to $34,564) (Levine et. al 2006).

While the specific intervention will vary depending on country context, the broad implication of these findings is that access to and provision of contraceptive information and services should be increased and improved. Increased resources and support are needed from a number of sources, including multilateral and bilateral donors and national governments (Singh et. al. 2003).

7.3.7. The Cost to Women and Their Families of Post-abortion Care

The cost of unsafe abortion to individuals and families is generally high.

Women who obtained hospital care for post-abortion complications bear a substantial proportion of the total direct cost of this care in Nigeria: Chapter 4 (Bankole et al.), reporting on a 2002 study, finds that on average women pay for an estimated 70% of this cost or about US$95 of a total cost of US$132. This would be the equivalent of about 10% of per capita income. It is important to bear in mind the significance of a large unexpected financial cost to those who are already poor or near poor: it may make the difference in whether they are able to emerge from poverty or not. It is possible that the proportion of the cost of post-abortion medical care borne by the individual is exceptionally high in Nigeria, where economic crisis conditions have led to health systems shifting costs to individuals in recent years. However, even if women in other Sub-Saharan African countries pay a lower proportion of post-abortion care costs than the 70% shouldered by Nigerian women, their share still likely signifies a substantial burden—for the individual and her household. Much more needs to be done to address the inequalities in access to basic health care and to provide safety nets for the poor.

7.3.8. Future Studies

More research is needed to better document the cost of unsafe abortion.

In many African countries, as Chapter 3 (Woog et al.) points out, a high proportion of hospital gynecological admissions are due to complications from unsafe induced abortion (UNFPA 2004 and Benson et. al. 2004), and treatment for abortion-related complications can consume a large portion of departmental budgets (Konje et. al. 1992, Lema et. al. 1997 and Lane et. al. 1998). Yet the literature on the economic costs of post-abortion care in Africa is rather limited and outdated: the authors were only able to identify 28 studies over a 20 year period. While several operations research studies compare MVA to D&C treatment for post-abortion complications, studies which estimate the overall cost of unsafe abortion at the national level are very rare, as are studies that provide costs broken down by type of complication.
Given the importance to public discussion of comprehensive information on the economic costs of unsafe abortion and the provision of post-abortion care, new research on these topics is of vital importance. In order to inform the policy debate within countries and internationally, governments and other stakeholders must endeavor to promote research on the economic impact of complications from unsafe abortion, both from the perspective of women themselves and the health care system. Also, research into the social costs of post-abortion complications, such as women’s inability to perform their social roles as wives and mothers, should be encouraged. Such studies can only be realized if national and international institutions commit the necessary resources.

The impact of unsafe abortion on households—the direct and the indirect economic costs as well as the social costs—is very poorly documented. The Nigerian case study provides an indication of the magnitude of the direct economic burden on individuals and households. More in-depth research is needed to understand the impact on a household’s economic status of both immediate direct costs, such as paying for a substantial portion of the cost of post-abortion care, and indirect costs with short and longer-term consequences resulting from morbidity and mortality caused by unsafe abortion.

7.4. CONCLUSION

This report and the studies on which it is based reaffirm the basic need of women and couples to control family size and the timing of births, and underscore that this need cannot be met without available information and access to health services. They also demonstrate that while contraceptive use is the primary means of achieving preferred family size and child spacing, abortion, including unsafe abortion, remains an important secondary means. The studies point to specific needs in each of these two very different settings for helping women and their partners to better regulate their fertility while avoiding negative health consequences and minimizing costs. The findings support the conclusion that if the desire to control family size and the timing of births is not satisfied through use of contraception, levels of induced abortion may rise. As the introductory chapter emphasizes, many countries that are undergoing a rapid demographic transition—from a state of high fertility to one of low fertility—are unable to meet the growing demand of couples for fertility regulation, resulting in unplanned pregnancies. Not using contraception, using less effective methods, and method failure further increase the risk of unplanned pregnancies and subsequent abortions.

The benefits derived from improving contraceptive use and reducing unintended pregnancies and abortion—in terms of reduced morbidity and mortality from abortion complications—are especially notable in countries where abortion is highly restricted by law or where safe abortion services are not easily accessible even though abortion is broadly permitted by law. An additional benefit of improving the ability of women to safely regulate their fertility that is less obvious and rarely measured but no less significant is the enhancement of women’s status, self-respect and sense of agency. This report also points to the need for more research on the costs and consequences of
inadequate and/or unsafe means of fertility regulation as well as on the benefits of adequate access to satisfactory means of fertility regulation, for both women and households.
REFERENCES


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