Each year, complications related to unsafe abortion account for at least one in seven maternal deaths worldwide. Nearly all of these deaths occur in developing countries and most are preventable. The authors argue that to prevent abortion-related deaths, all women must have access to safe abortion and contraceptive services, and they discuss the strategies used to prevent abortion-related deaths—preventing unwanted pregnancy, preventing abortion, preventing unsafe abortion, and treating abortion complications. Some of these strategies have been effective, while others have failed. Preventing unwanted pregnancy is a very important starting point, but evidence suggests that it alone cannot solve the problems of abortion-related deaths. Efforts to prevent abortion, whether through legal or cultural sanctions, do not significantly reduce the number of abortions, and may even increase mortality. The technology to perform safe abortions is available, but remains underused. Finally, even under the best of circumstances, women will experience abortion complications (induced or spontaneous) and only through the prompt and effective treatment of these and other obstetric complications will deaths be averted.

Many women in this country remember what it was like before abortion was legalized in 1973—the dread of a “missed period,” the horror stories (often true) about women who drank caustic liquids, women who aborted themselves with coat hangers, women who developed terrible infections after visiting back alley abortionists, women who died. For us, those bad old days are virtually gone, but they are still here for more than one-third of the world’s women who live in countries where abortion is either completely illegal, or legal in very narrow circumstances.

In this article we will describe both the extent of maternal mortality in developing countries and the important role that abortion can play in keeping maternal mortality high, as well as the strategies for reducing abortion-related mortality in developing countries.

Maternal Mortality in Developing Countries
The death of a woman from complications of pregnancy or delivery is a rare event in developed countries. Fewer than 300 such deaths are reported in the United States each year,1-3 or fewer than 8 maternal deaths per 100,000 live births.4 And yet it was not so long ago that maternal mortality was a major threat to women everywhere. In 1930, the maternal mortality ratio in the United States was 673 deaths per 100,000 live births,4 similar to current estimates for Africa.5 Figure 1 shows maternal mortality ratios (MMRs) in a variety of countries.6 (Although it is often called the maternal mortality “rate,” the number of maternal deaths per 100,000 live births is a ratio. The true rate is the number of maternal deaths, per year, per 100,000 women of reproductive age.)

The difference between developed and developing countries is greater for maternal mortality ratios than for any other commonly used index of health. The difference between developed and developing countries in terms of infant mortality, for example, is 5-fold (15 v 76 infant deaths per 1,000 live births), compared to a 15-fold difference in maternal mortality (30 v 450 maternal deaths per 100,000 live births).7-9

As stark as this contrast is, such statistics do not convey the full impact of maternal deaths. The maternal mortality ratio indicates the average risk of death per pregnancy, but most women in developing countries become pregnant many times during their lives, and the risk to their health adds up. Combining the MMR with the average number of births gives a clearer idea of the danger over a woman’s lifetime, as shown in the

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Figure 1. Maternal Deaths Per 100,000 Live Births (Maternal Mortality Ratios), Subnational and National* Studies, 1976-1985
(Source: Maine, 1991)
countries. (A direct obstetric death is one due to complications of pregnancy, delivery, or the puerperium, including abortion complications.) Because reliable vital statistics are not available for most developing countries, these data are drawn from the relatively few population-based studies that have been conducted.  

Direct obstetric causes account for three-quarters of all maternal deaths.  

Abortion is the second leading cause of maternal deaths, accounting for 19% of direct obstetric deaths (14% of all maternal deaths).

Using this proportion, approximately 70,000 women die each year from the complications of induced abortion (14% of the estimated 500,000 maternal deaths worldwide). Other estimates of abortion-related deaths are much higher—up to 200,000 per year.  

There is no way of knowing which estimate is closest to the truth, because induced abortion is still illegal in most developing countries. As a result, deaths from abortion are often either not reported at all, or are misclassified. Whether the true number of abortion deaths is 70,000 or 200,000 per year, it is unacceptably high for a number of reasons.

First, it reflects a violation of human rights. The Convention on the Elimination of All Forms of Discrimination against Women, which has been endorsed by 130 countries (International Women’s Rights Action Watch, University of Minnesota, personal communication, 1994), prohibits any policy “that has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field.” Moreover, the Convention states that women have the right to “decide freely and responsibly on the number and spacing of their children and to have access to the information, education, and means to enable them to exercise these rights.” Women cannot effectively exercise this right without access to abortion because even very effective methods of contraception (eg, tubal ligation, implants, and injectables) have failure rates of at least 4 to 5 pregnancies per 1,000 users per year.

Second, of the five major causes of maternal death, life-threatening complications of abortion is the one for which prevention holds the most promise. Once a woman is pregnant, the medical conditions leading to such complications as hemorrhage, prolonged/obstructed labor, and hypertension cannot be prevented in most cases, although they can be treated. Most complications of induced abortion, however, can be completely averted by providing safe, early abortion services.

The consequences of abortion-related complications must be measured not only by the number of deaths, but in morbidity as well; for every woman who dies, many more have serious, often long-term complications, such as cervical lacerations, uterine perforation, and damage to the bladder and intestines. Secondary infertility is also a common complication of unsafe abortion and in many cultures is a devastating outcome for the woman. There is also the tremendous cost to the health care system in countries with limited or scarce health resources; in Bolivia, for example, 60% of the country’s obstetric/gynecological expenditures are for treating complications from illegal abortions.

### Strategies for Preventing Abortion Deaths

Theoretically, there are only a few possibilities for preventing deaths from induced abortion: preventing unwanted pregnancies, preventing abortions, preventing unsafe abortions, and treating abortion complications. These strategies and the ways in which they have succeeded and failed in preventing abortion-related mortality are discussed below.

### Preventing Unwanted Pregnancies

It is often said that family planning programs will reduce the demand for induced abortion. There is evidence from developing countries that this is true. In Chile, for example, as the use of modern contraceptives increased between 1964 and 1979, not only did the birthrate fall, but there were also sharp declines in maternal deaths due to abortion and in the proportion of obstetric hospitalizations due to abortion complications (Asociación Chilena de Protección de la Familia, unpublished data, 1978).

Evidence that family planning programs can reduce the incidence of...
induced abortion can also be found by comparing countries with low levels of contraceptive use (eg, Eastern Europe) to those with high levels (eg, Western Europe). In some countries in Eastern Europe in the mid-1980s, more than 40% of known pregnancies were aborted, compared to less than 25% in Western Europe.\(^\text{14}\)

It would be a mistake, however, to think that even the best family planning program will greatly reduce the demand for induced abortion. There are a number of reasons why this does not happen. One is that all contraceptive methods fail in some proportion of cases, and even low failure rates add up to a considerable number of unwanted pregnancies. Over the course of several decades, even women correctly using an effective method may well experience at least one unwanted pregnancy. In addition, as the desired family size declines in the population, unwanted pregnancies take on greater significance for the woman and the family, and may be more likely to be aborted.

Finally, there are many reasons for unwanted pregnancies other than contraceptive failure. At various points in their lives, many women find contraceptives inconvenient, difficult to use, difficult to obtain, or too expensive. Unwanted pregnancies also occur when male partners are hostile to or are unwilling to take any responsibility for contraception. In some developing countries, family planning clinics will not serve unmarried women, and require spousal consent from married women.\(^\text{20}\)

Even where unmarried women are served, information, education, and contraceptive campaigns are geared toward adult women in stable unions. And we must not forget that many women have little or no control over whether and when they have intercourse. While the most blatant instances of this lack of control are rape and incest, sexual coercion (both in and outside of marriage) is even more widespread. This is especially important to remember when discussing unwanted pregnancies among adolescents.

### Preventing Abortions

Societies have employed social, religious, and legal sanctions in order to prevent women from aborting unwanted pregnancies. For example, less than half the world’s population lives in countries where abortion is permitted on request.\(^\text{14}\) One-quarter of people live in countries where abortion is permitted only to save the woman’s life.\(^\text{14}\) Such sanctions, however, apparently do not deter women from seeking abortions, nor health care workers and others from providing them.

In societies where there are strong sanctions against induced abortion, its incidence is impossible to determine. Nevertheless, there is ample evidence that sanctions are not successful.

Consider Latin America, where the Roman Catholic church is a major cultural force and the governments of most countries forbid abortion except to save the woman’s life.\(^\text{14}\) Induced abortion is the leading cause of death among women age 15 to 39 in this region.\(^\text{21}\) A recent study of women hospitalized in four Latin American countries for complications related to abortion (spontaneous or induced) showed that in two-thirds of cases the abortion had probably been induced, more than seven times the proportion indicated in the official records.\(^\text{22}\)

Similarly, in Africa it is sometimes said that most women “want as many children as God will send.” But even the imperfect data available show that this cultural stereotype does not hold and that many women will risk their health and even their lives to avoid unwanted births. At Kenyatta Hospital in Nairobi, Kenya, for example, about 10,000 women are treated for complications of induced abortion each year.\(^\text{23}\) On the other side of the continent, at the University Teaching Hospital in Ibadan, Nigeria, from 1980 to 1989 half of all emergency gynecology admissions were due to abortion.\(^\text{24}\)

If anything, social and religious sanctions increase morbidity and mortality because women who feel guilty and afraid are likely to delay both obtaining an abortion and seeking medical treatment for complications. Even where the medical standards of care are high, the risk of abortion increases as pregnancy progresses. Per 100,000 procedures in the United States from 1981 to 1985, there were 0.2 deaths from abortions performed at 8 weeks or less since the last menstrual period, 3.7 deaths at 16 to 20 weeks, and 12.7 at 21 weeks or more.\(^\text{14}\)

### Preventing Unsafe Abortions

Changes in the legal status of abortion can have a dramatic effect on women’s health. In England and Wales, for example, there were no abortion deaths during the three-year period 1982-1984, compared to 75 to 80 deaths during similar periods before the abortion law was liberalized in 1967.\(^\text{25}\) Conversely, the effect of enacting restrictive laws is vividly illustrated by the experience of Romania. Before Romania adopted a restrictive policy in 1966, its maternal mortality ratio was similar to that of other Eastern European countries; afterward, it was more than ten times as high.\(^\text{26}\)

While laws making abortion legal help to reduce abortion deaths, they are neither absolutely necessary nor enough to improve access to safe abortion services.

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**Figure 2. Medical Causes of Direct Obstetric Deaths in Developing Countries**

In some areas (especially cities) in developing countries, safely performed abortions are fairly easy to obtain, even though they are illegal. This situation may exist partly because the laws are not rigorously enforced and partly because increasing numbers of medical personnel perform abortions. In some Latin American cities, for example, high-quality and high-volume services exist, even though abortion is legal only to save the woman’s life. This is not the case in many countries, however. In Ibadan, Nigeria, 30% of women treated for complications of abortion at the hospital said that the procedure had been performed by a physician and an additional 6% said that a nurse had performed the abortion. The procedures performed by these health workers sometimes caused serious complications and even some deaths, suggesting that where abortion is illegal, the training of medical personnel is hampered.

The situation in India shows that legal reforms alone are insufficient. Abortion has been legal in India on broad social and medical grounds since 1963. Safely performed abortions, however, are not available to many women for a variety of reasons, including cost and distance to a licensed provider. The licensing regulations are rigorous and complex, and limit performance to physicians with special training in obstetrics/gynecology, of whom there are an insufficient number. Consequently, deaths from abortion in India constituted 14% of all maternal deaths in 1984-1985. Even research on abortion suffered, since researchers and institutions were afraid of losing their funding. The situation has improved under the Clinton Administration.

We have too little information on maternal mortality and morbidity in most developing countries to plot trends over time, and even less reliable information on abortion mortality and morbidity. Nevertheless, some lessons can be learned from the experiences of developed countries. One is that legalization may not have the desired effect on access if regulations are very stringent, as they are in India. Regulations ensuring good quality services are important, but they should not be so restrictive that they impede widespread development of services. In New York State, for example, the liberalized abortion law of 1970 led to a rapid growth of freestanding clinics specializing in early abortions, and the cost of a first-trimester abortion dropped from more than $1,000 to less than $200. Improved accessibility resulted in a decrease not only in mortality, but also in morbidity.

Technical considerations also affect the availability and safety of abortion services in developing countries. Menstrual regulation (MR), for example, is the removal of uterine contents through mechanical or pharmaceutical methods, often before pregnancy is confirmed. It is usually performed when menses is expected, although it can be performed up to several weeks after that time. In many cultures, these methods of “promoting menstruation,” “removing menstrual irregularity,” or “bringing down the period” are considered acceptable, while abortion is not (see box on MR in Bangladesh).

Manual vacuum aspiration (MVA) is a mechanical technique for performing MR, early abortions, and for finishing incomplete abortions using a simple, manually operated vacuum syringe and cannula. This reusable equipment requires no electricity and no anesthesia. And with proper training, nurses and other nonphysicians can perform MVA safely. This technique makes it possible to provide abortion services in rural areas of developing countries.

MVA also eliminates the risks posed by sharp curettage (SC), including uterine perforation, hemorrhage, cervical trauma, and the added risk associated with the use of general anesthesia. A study comparing MVA with SC in Kenya and Mexico showed that women treated with MVA spent less time in the hospital, required fewer drugs, and were charged less. Despite its life-saving potential, reduced cost, and the fact that the World Health Organization has declared it the procedure of choice for MR, MVA is not being adopted in some developing countries.

RU 486 (mifepristone) is another form of MR or early abortion (see Castle, pp 156-159). An antiprogestrone that provokes the shedding of the endometrial lining, it is 60% to 90% effective in terminating pregnancies of up to nine weeks. When it is followed 36 to 48 hours later by a prostaglandin analogue, the effectiveness rate is at least 95%, comparable to that of vacuum aspiration and dilation and curettage. While RU 486 is not yet widely available in any developing country, clinical trials have been conducted in Cuba, India, China, Singapore, and Zambia, and acceptability studies are being conducted in India, Cuba, China, and Vietnam (Population Council, personal communication, 1994).

RU 486 has significant advantages, as well as some drawbacks. To use RU 486/PG safely and effectively does not, for the most part, require great clinical skill, elaborate equipment, or facilities. Thus, it could help to decentralize and increase access to abortion services. A disadvantage of RU 486 is that three clinical visits are recommended. Given the many hours women in developing countries spend travelling to the nearest health facility, one trip might be feasible, two or three would be impossible. Another concern arises from the over-the-counter availability of most drugs in many developing countries. This means that women could obtain and use RU 486 without medical supervision, and might do so either too late in pregnancy or incorrectly (eg, neglect to use the prostaglandin). It is also likely that some conditions for which RU 486 is contraindicated would not be detected in developing countries. Still, these dangers
must be compared to the alternative methods of abortion and their risks in each local situation.

**Treating Abortion Complications.**

Given the current state of laws and medical services in many developing countries, complications of unsafe abortions constitute a problem that will continue for the foreseeable future. In addition, a growing body of research shows that emergency care for women with obstetric/gynecologic complications is woefully inadequate in many developing countries. A recent survey in Bangladesh, for example, found that 15% of district hospitals (which serve an average population of 1.7 million) were not providing blood transfusions. Many smaller facilities were not providing even basic care for obstetric complications even though they have doctors on their staffs.37

Even where services are available, cultural and legal sanctions against abortion discourage women from seeking treatment of complications, either promptly or at all. Women may not seek treatment for fear that family and friends will find out and they will be scolded, harassed, or even prosecuted. And women may not receive prompt care once they do reach the health care facility; it has been observed that staff sometimes neglect these patients, as a way of expressing their disapproval of abortion (Victoria Ward, PhD, personal communication, 1994). Social barriers are fairly difficult to eradicate. And while widely accessible, high-quality, and early abortion procedures (eg, MR) will greatly reduce the number of complications from induced abortions, women will continue to experience obstetric emergencies (including complications of spontaneous and induced abortion) that require prompt treatment. Only by making treatment of obstetric complications a priority will deaths from such complications be averted.

**Conclusion**

Many conclusions can be drawn from the data presented above. One of the most striking is that millions of women in developing countries are so determined to control their fertility that they willing undergo painful and dangerous procedures, from which at least 70,000 of them die each year. Access to safe, legal abortion would prevent the major-

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### Menstrual Regulation (MR) in Bangladesh

The history of MR in Bangladesh is an unusual and interesting one. Bangladesh is a young country with a conservative Moslem population where most rural women are confined to the family compound. And yet the government has not only made early abortion legal, but has also tried to make it as widely available as possible. In order to do this, it even broke the nearly universal tradition of allowing only physicians to terminate pregnancies.

In 1979 (less than a decade after Bangladesh became an independent nation) the government decided that MR services should be available not only in all government hospitals, but also at health and family planning clinics. It established the MR Training and Service Program, comprising 14 centers where MR training is provided to government and private doctors and to female family planning paramedical workers (Family Welfare Visitors or FWVs) who serve women primarily in rural areas.1 The FWVs have at least ten years of formal schooling prior to taking an 18-month course in family planning and maternal and child health.

Between 1979 and 1990, approximately 7,000 doctors and FWVs were trained to provide MR. With the exception of some remote areas, MR services are supposed to be available throughout the country.2 A 1987 survey estimated a total of approximately 240,000 MR cases performed in Bangladesh from August 1985 to July 1986.3 The survey also revealed that trained MR providers treat thousands of cases of incomplete abortion, most of which are believed to have been performed by traditional practitioners.4 While hospital admissions for abortion complications have reportedly declined, abortion has remained an important cause of maternal death in rural Bangladesh; one study found that in 1982-1983, there was approximately one abortion death for every 1,000 live births.5) While nearly two-thirds of providers performed MR in government clinics, 13% of all providers (mostly physicians) used private clinics and 25% performed MR’s in their own or their clients’ homes. About one out of six MR clients surveyed reported some complications, with no difference between clients of doctors and FWVs.5

A 1986 survey indicated that FWVs are a better investment for MR training because they emigrate less than male physicians, are posted in rural areas, and are more likely to be doing MR’s than are doctors. In addition, many female clients are reluctant or unable to go to male doctors due to female modesty and the requirements of purdah (traditional seclusion). Of course, physician training remains important as a skilled back-up service.1

As impressive as this history is, some problems persist. Difficulties with access to and/or utilization of services continue. About 30% of potential MR clients were rejected by trained doctors and FWVs for reasons ranging from a suspected pregnancy beyond ten weeks since last menstrual period to first pregnancy (there are unfounded fears about effects on future reproductive capacity) to “social grounds” (such as the client being unmarried).

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### References


ty of these deaths. One hundred and thirty countries have affirmed women’s right to “decide freely and responsibly on the number and spacing of their children and to have access to the information, education, and means to enable them to exercise these rights.” Now they need to make this a reality.

Women’s health advocates in developed countries can play a valuable role by urging funding agencies to support programs that provide women with the means and information they need to make decisions based on their own evaluation of the risks and benefits of pregnancy and childbirth, that respect the decisions women make about their own lives regardless of the views of others (doctors, husbands, lawmakers), and that help them to carry these decisions out.25,39

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