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## **Case Studies in Emergency Contraception from Six Countries**

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In countries where emergency contraception is offered, its availability and use vary widely, according to such factors as regulations and policies regarding the method, providers' and women's understanding of and attitudes toward it, and cost. The experiences with the method in six countries—the United Kingdom, the Netherlands, Malaysia, China, Mexico and Nigeria—illustrate a range of issues involved in introducing and encouraging the acceptability of emergency contraception.

Emergency contraception first became available in most of these countries in the late 1960s and early 1970s. Today, in the United Kingdom and the Netherlands, the method is an accepted part of family planning practice and is well-known among doctors and women. This acceptance may be partly due to the method's inclusion in the health insurance systems of these countries.

Another factor explaining the established role of emergency contraception, at least in the Netherlands, is the lack of moral debate surrounding the method. Only its side effects and efficacy seem to engender controversy; the need for emergency contraception is acknowledged and accepted even for teenagers, for whom sexual activity is socially sanctioned.

By contrast, in Malaysia, as in other countries where abortion is strictly regulated, emergency contraceptive methods are marketed legally, but family planning organizations shy away from offering them.

In China, post-coital methods have long been offered by the government family planning service. However, these methods have not been separated into those advocated for emergency use only and those recommended for ongoing use.

Finally, in Mexico and Nigeria, awareness of emergency contraception continues to be low among both health care providers and the public.

Research, both on a way to create knowledge of emergency contraception and on a way to publicize the methods, has been largely concentrated in European countries; many developing countries, and even many developed ones, have to conduct any research on this topic. For example, Mexico's first clinical trial on an emergency contraceptive method (a combination of levonorgestrel and ethinyl estradiol, administered orally or vaginally) is under way, fully 30 years after the original research on the method was conducted.

In the case studies that follow, we summarize information on experiences with emergency contraception in each of these countries. We then draw on these experiences to suggest lessons for other countries seeking to introduce or expand the use of this method.

## **United Kingdom**

### **History of Emergency Contraception**

Although British doctors occasionally administered high-dose estrogen or inserted an IUD for the purpose of emergency contraception in the early 1970s, it was not until 1974 and the publication of the first article on emergency contraception using a combined estrogen-progestogen regimen that the method's use became widespread in the United Kingdom [1]. The National Association of Family Planning Doctors met in 1982 to discuss emergency contraception and a year later published a set of clinical guidelines establishing two combined pills, Ovran and Eugynon 50, as the preferred hormonal regimens [2].

In 1982, the Department of Health stated that treatment up to 72 hours post-coitally was "probably legal", but that treatment after five days "might be considered an abortion" [3]. The following year, an antiabortion lobbying group filed several complaints against clinics providing emergency contraception; the group based its argument on the Offences Against the Person Act of 1861, which made it illegal for a woman or her doctor to "intend to procure a miscarriage." In response, the attorney general ruled that emergency contraception administered within 72 hours after intercourse was not a criminal offense, reasoning that "preventing implantation is not procurement of a miscarriage" [4].

At the request of the Department of Health, the Committee on Safety of Medicines undertook a review of emergency contraception in 1983 and determined that the method was "acceptably safe for occasional use." The pharmaceutical company Schering submitted an application for a product based on Eugynon 50 to the Medicines Division in August 1983 and received a license in January 1984. PC4 (50 mcg of ethinyl estradiol and 0.5 mg of norgestel in each of four tablets) was on the market by October 1984.

Discussion is under way with regard to making PC4 available from pharmacists without a doctor's prescription, a step that most professional organizations support. The Royal College of Obstetricians and Gynecologists organized meetings about the matter in December 1994 and July 1995. It is up to Schering to apply to change the license, and the company thus far seems reluctant to do so.

### **Availability and Prevalence**

General practitioners are the major source of emergency contraception in the United Kingdom. Everyone in the United Kingdom is entitled to register with a general practitioner. For contraceptive services, women may also visit a general practitioner other than the one they are registered with, although this option is not widely known.

Women in most cities and large towns may also seek emergency contraception at National Health Service family Planning clinics. Since 1972 these clinics have provided contraceptives free of charge. The clinics offer anonymity to women reluctant to consult their general practitioner and may be open in the evenings and on weekends; however, not all towns-and few villages-have such centers, and at least half of these clinics are open only once a week.

The nonprofit Brook Advisory Centers which, provide services to young people in cities throughout England and in Edinburgh, Scotland, provide emergency contraception. Some hospitals accident and emergency departments also provide hormonal emergency contraception.

National data on the prevalence of emergency contraception do not exist, but reports from clinics suggest that use has been rising rapidly. Knowledge of emergency contraception is fairly high; the late 1980s found that 65-77% of women undergoing induced abortion had heard of emergency, contraception [5]. A small, unpublished survey conducted by Schooling in 1994 found that 90% of

women had heard of emergency contraception. However, many women continue to be unaware of the 72 hour time limit or of the method's ready availability. Levels of knowledge of postcoital IUD insertion are low.

Schering's sales data for PC4 indicate that about 353,700 packets were sold in 1992, and 420,500 were sold in 1993. Schering has sold 2.5 million packets of PC4 since the regimen was licensed in 1984. One clinic in Edinburgh reports that the use of emergency contraception has doubled in the last five years and now accounts for about 4% of the 47,000 visits made to the facility annually.

There is no way of estimating the extent to which Ovran is prescribed for emergency contraception or how many IUDs are inserted for post-coital indications, since these contraceptives are a so on an ongoing basis.

### **Cost**

All contraception in the United Kingdom, including emergency contraception, is free to the patient. Schering sells the PC4 combination to the National Health Service at a cost of about U. S. \$2.20 per treatment. Many family planning clinics and some, general practitioners make up their own supplies using Ovran, at a cost of about 25 cents for the four tablets. The actual cost to the clinic is somewhat higher because of packaging costs. In addition, some clinics provide six tablets, to leave a woman with two spares in case she vomits. Others add an antiemetic, at a cost of around 16 cents per tablet. An IUD costs the National Health Service about \$11-\$16, although clinics that buy in bulk may pay considerably less.

A recent study of the cost-effectiveness of contraception estimated considerable saving to the National Health Service from the use of emergency contraception to prevent unintended pregnancy" [6]. Even on the basis of failure rates as high as 25 births per 100 users of emergency contraception per year, the study estimated that prescribing PC4 costs between \$19 and \$74, depending on the provider, and saves the government health service \$727-\$806. Estimates of costs averted did not include such costs to society as those associated with education antisocial services.

## Netherlands

### History of Emergency Contraception

Emergency contraception has been used in the Netherlands since 1964 [7] and is widely known and accepted there. The Netherlands places a high priority on preventing unwanted pregnancy, and information on emergency contraception has always been included in family planning education programs and materials. The level of contraceptive use is generally high, and the incidence of unwanted pregnancy and abortion is low. Thus, while emergency contraception is free of moral debate, is not considered an abortifacient and is considered acceptable for teenagers, the need for it is reduced by the high levels' of effective contraceptive use among women of all ages [8].

As early as 1970, emergency contraception was covered in the first family planning handbook for Dutch doctors [9], and within a few years, the method became widely available through general practitioners, who form the backbone of the Dutch health care system. (Every citizen is registered with a general practitioner.) The Dutch Family Planning Association, the Rutgers Stichting, also began offering the method in the early 1970s. However, overall use of emergency contraception declined by 50% between 1974 and 1983, primarily because of a sharp increase in the use of ongoing methods of contraception after their inclusion in the national health insurance program.

The original emergency contraception regimen used in the Netherlands consisted of five pills of ethinyl estradiol taken for five days--a total dosage of 25 mg, or the equivalent of three years' worth of modern low-dose oral contraceptives. (This regimen is commonly known as the 5x5 method.) In around 1980, the "Yuzpe method" was introduced in the Netherlands. This regimen, which came to be known as the its two doses of two pills taken 12 hours apart, quickly replaced the 5x5 method for example, by 1985, 83 % of prescriptions for emergency contraception from general practitioners [10] and 97% of those from the Rutgers Stichting were for the Yuzpe method [11]. However, over the last 10 years, the side effects and efficacy of both methods have been the subject of vigorous debate among practitioners and researchers. Several specialists feel that the 5x5 method provides fat too heavy a hormonal dose, while others are of the opinion that the 2x2 method is not sufficiently reliable.

This debate has spilled over into the general public's consciousness and has at times affected the willingness of physician to prescribe certain regimens and of

women to use them. The 5x5 method, sometimes referred to in the mass media as a "hormonal bomb," has been subjected to particularly harsh criticism. After articles critical of the method were published in 1987, the number of emergency contraception prescriptions written by general practitioners fell by 25% from the year before [12]. Today, some doctors reportedly prescribe their own emergency contraception regimens [13], and some women devise their own.

In response to this controversy, in 1987, the Rutgers Stichting adopted a policy of offering women a choice of the 5x5 or the 2x2 regimen or IUD insertion. More recently, there have been calls to make mifepristone available for emergency contraception in the Netherlands [14].

### **Availability and Prevalence**

Partial data on use of emergency contraception in the Netherlands are available through 1991, collected as part of the national sentinel system of general practitioners. General practitioners provide about three-quarters of the prescriptions for emergency contraception in the Netherlands; in 1991, they wrote 28,000 emergency contraception prescriptions [15]. This level had remained more or less stable since 1985. The Rutgers Stichting probably provides an additional 2,000-7,000 prescriptions annually. Data on IUD insertion for emergency contraception are not available, although use of this method is resumed to be rare because most women requesting emergency contraceptive services are young and have never been pregnant. In total, the rate of use is about one per 100 women per year.

In 1991, of all women receiving emergency contraception from general practitioners, about 70% were younger than 25, and 34% were younger than 20 [16]. The proportion of emergency contraception prescriptions that are for adolescents, however, is higher (51%,) at the Rutgers Stichting clinics.

A pair of studies conducted in Amsterdam [17] suggest that condom failure prompted the request for emergency contraception in 19-29% of cases and that missed pills accounted for 13-25% of requests. Slightly fewer than half of the women in these studies had unprotected intercourse at midcycle, suggesting that many women seek emergency contraception even when the risk of pregnancy is slight.

## **Cost**

The cost to a Dutch woman of emergency contraception is determined by the type of health insurance that covers her. The largest insurance carrier is the Sick Fund, which is publicly controlled but privately administered and covers about 60% of all citizens. The remaining 40% of citizens are privately insured. In addition, all Dutch citizens are covered by the General Law on Exceptional Medical Cost (AWBZ), a national form of insurance intended primarily to cover catastrophic and long-term care, but recently expanded to include the cost of medical drugs. Sick Fund members may receive medication free of charge directive from their pharmacy. Privately insured patients must pay for medications out of pocket, but can be reimbursed by the AWBZ.

At pharmacies, the price of the 2x2 method is about \$7-\$9. The 5x5 method, including an antinausea medication, costs around \$41. In order to receive the prescription, however, women must consult their general practitioner. This visit is free for women covered by the Sick Fund; privately insured women must pay a fee of approximately \$20.

The Rutgers Stichting provides the 2x2 regimen free, but charges a consultation fee that varies from around \$10 to \$20, depending on whether the woman is older than 18. Women who obtain the 5x5 method from the Rutgers Stichting pay about \$20 for the pills and antinausea medication, in addition to the consultation fee.

Both the Sick fund and the private insurance system may impose obstacles for adolescents. Young people must either request the Sick Fund card from their parents or pay directly and then request reimbursement, through their parents, from the AWBZ. Consequently, many adolescents seek emergency contraception at the Rutgers Stichting clinics rather than from their general practitioners.

## **Malaysia**

### **History of Emergency Contraception**

Although hormonal emergency contraception has purportedly been available in Malaysia since 1966, the first emergency contraception regimen, Postinor, was not officially registered there until 1987. Three years later, a second regimen,

Estinor, was registered. These are reportedly the most common specifically registered methods used.

Both brands consist of 0.75 mg tablets of levonorgestrel, and the recommended dose is a single tablet to be taken within one hour after unprotected intercourse. If the woman has engaged in more than one act of intercourse, the manufacturers recommend that a second dose (two Postinor tablets or one Estinor) be taken eight hours later. These brands are usually sold in 10-tablet strips, and physicians often divide strips and provide women with only as many pills as they need.

In Malaysia, emergency contraception is often erroneously viewed as an "abortion pills" Since abortion is stringently regulated, this misperception may have led to reluctance on behalf of some service providers and program administrators to provide emergency contraception or even information about its existence and benefits.

### **Availability and Prevalence**

Data on emergency contraception are not available from the national family planning program, and the literature on the method in Malaysia is scant. Government-run family planning clinics do not provide emergency contraception, and the private practitioners who do are reluctant to speak about it. Although the Federation of Family Planning Associations, Malaysia (FFPAM) prefers to stress regular use of an effective method, rather than distributing something that acts as an "abortion pill", FFPAM members follow guidelines for the provision of emergency contraception established in a 1992 International Planned Parenthood Federation quality assurance manual [18].

Emergency contraception is, however, available from both pharmacies private Physicians in Malaysia. Although Postinor and Estinor both fall under the regulations of the Poisons Act, they may be purchased without prescription if the woman provides her name, address and identification card number o the pharmacist.

Very through estimates based on sales by pharmacies indicate that at least 20,000 women obtained emergency contraceptives in 1994. The exact number is difficult to determine because some women purchase just the tablets they need to cover one act of unprotected intercourse, where as others buy extra pills.

Few women receive emergency contraception from FFPAM clinics; only 60 did so in 1993. These women were 20-40 years old and requested emergency contraception for a variety of reasons: unexpected and unprotected intercourse, missed pills and ruptured condoms. In addition, some pharmacies report that Estinor is used by sex Workers, as well as by rape victims.

At pharmacies in Malaysia, the strip of 10 pills--enough to cover five episodes of unprotected intercourse--costs the purchaser \$3-\$6. At private clinics, the cost for 1-3 tablets is approximately \$4, which includes the consultation fee.

## **China**

While postcoital contraception is a topic of research for China's State Family Planning Commission program, and postcoital methods are included in the government family planning program, figures on the prevalence of emergency contraceptive use are not available.

Postcoital contraception was first developed in China in the 1970s,, primarily for use by married couples living at a distance from one another. Thus, the focus of postcoital contraception has been on a "visiting pill" for ongoing use by couples who are only infrequently exposed to the risk of pregnancy. Although the literature on the use of visiting pills is extensive, there are few reports of their use for emergency contraception.

Preparations packaged as visiting pills (also known as vacation pills and quick action pills) often consist of high doses of norethisterone, megestrol acetate or norgestrel. Other compounds, such as quingestanol, norgestrienone and norethisterone acetate-3-oxime, are also used [19].

The most commonly used visiting-pill formulation is anordrin, a compound synthesized in Shanghai in 1975 [20]. One 75 mg tablet is taken the morning after unprotected intercourse, and one is taken every night for three nights. The cost of the regimen is only a few cents.

Reportedly, sonic women obtain IUDs after experiencing contraceptive failure (for example, when a condom has broken), but it difficult to distinguish when an IUD has been inserted for emergency contraception.

Researchers at the International Peace Maternal Hospital in Shanghai have experimented with levonorgestrel suppositories, in the hopes that vaginal administration would reduce the nausea and vomiting associated with the elevated hormonal dosage of emergency contraception. The tablets, however, were not sufficiently soluble to be highly effective.

China is also testing mifepristone as an emergency contraceptive, both alone and in conjunction with other hormones. As yet, mifepristone is available only in clinical trials, but family planning advocates hope it will be introduced soon for general use as an emergency contraceptive.

## **Mexico**

Emergency contraception is little known in Mexico, among either providers or consumers. Since oral contraceptives are available without prescription, women have potential access at least to the Yuzpe regimen (which would cost about 50 cents); however, they may not be aware of it.

Although requests for emergency contraception reportedly are frequent in Mexico, providers themselves lack adequate information on this method. One objective of a clinical trial currently under way in Mexico is to increase knowledge of emergency contraception among health professionals, including family doctors and general practitioners, and pharmacists.

## **Nigeria**

Traditional fertility control methods in Nigeria include several that are used either immediately after unprotected intercourse or when a pregnancy is first suspected. Among these are potash mixed with bluing, lime taken in high concentration with cayenne pepper seeds, and a codeine tablet used together with illicit gin. Nigerian women are also gradually learning that altered doses of oral contraceptives can function as emergency contraceptives.

No data are available on the prevalence of emergency contraception or on the costs of hormonal regimens in Nigeria. An IUD insertion costs \$23 in a private hospital. Codeine and gin costs about 52.25; the other traditional emergency contraceptives are very inexpensive.

## Lessons Learned

The experiences with emergency contraception described in this article highlight several issues that may be relevant in other countries as well.

As the case studies demonstrate, both providers and potential users need to be well informed about emergency contraception, how it is used and its availability. The importance and the role of emergency contraception can easily be shadowed by, family planning's traditional mission to ensure consistent, effective contraceptive use, particularly in developing countries, where the focus may be on lowering fertility.

Emergency contraception is most widely used in countries where it is well integrated into general family planning services and information and education efforts, such as the United Kingdom and the Netherlands. It has a key place both within family planning's traditional emphasis, as a backup for method or user failure, and as a last resort in the instance of unexpected intercourse.

Another lesson is that a clear distinction must be drawn between emergency contraception and abortion, especially in countries where abortion is legally restricted or carries a moral stigma. A confusion of emergency contraception with abortion can seriously impede efforts to prevent unintended pregnancy through use of emergency methods, as in Malaysia. Emergency contraception should be cast as an important way to reduce the need for abortion.

Furthermore, the experiences in the United Kingdom and the Netherlands illustrate that even in countries that have good data on emergency contraception, information about its use is incomplete. Data on emergency contraception should be collected along with other routine family planning statistics. To date, efforts to examine the use of emergency contraception have been complicated by the fact that the IUD and combined oral contraceptives may be used for either regular or emergency contraception. In the future, efforts should be made to distinguish the different uses of these methods.

The case studies also show that emergency contraception should be available from a variety of sources---certainly general practitioners or family doctors, as well as family planning clinics, which offer more anonymity. The British and Dutch experiences demonstrate the importance of both a network of highly informed, properly motivated, easily accessible service providers and wide

dissemination of information among them and the lay public. While the success of emergency contraception in these countries probably can not be separated from the overall high and accessibility of their health care and contraceptive services, it appears that emergency contraception is most widely used when it is well integrated into routine care.

A further point for planners to consider is that is more than one way to administer emergency contraception; countries might experiment with different delivery mechanisms and regimens, as pChina has done and as Mexico plans to do in its current study.

The remaining lesson concern uses of emergency contraception that have not traditionally been the focus of most Western countries. For example, as China has, demonstrated, emergency contraception may have applications beyond preventing pregnancy after a single exposure to unprotected intercourse. Method like the visiting pills used in China may well be appropriate for use in other countries where couples have intercourse infrequently. In Malaysia, meanwhile, the reported use of Estinor by sex workers suggests another group for whom emergency, contraception may be particularly valuable.

Finally, the Dutch case reveals that emergency contraception may be particularly important for adolescents. As young people establish their sexual identity, and contraceptive practice, they may be likely to use contraceptives ineffectively and subsequently experience contraceptive failure. For them, emergency, contraception may provide a crucial safety net in the event of intercourse they did not expect or adequately prepare for, as well as a bridge to more regular and sustained contraceptive use.

## **Conclusion**

Although emergency contraception has been available for about three decades, its potential to reduce the incidence of unintended pregnancy and abortion is just beginning to be realized. In only one of the six countries examined here, the Netherlands, has the method settled into a well-accepted niche so that efforts can focus on refining the regimens and informing women about them. Even in the United Kingdom, the use of emergency contraceptives has been growing rapidly, which suggests that the method is still regarded as "new".

Emergency contraception may well fill an important gap among groups whose needs have gone unmet by traditional family planning programs. The experiences of these six countries suggest that family planning researchers and practitioners must be both persistent and innovative as they work to make emergency contraception available to more women in more countries around the world.

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\*\* Abortion is legal in the United Kingdom under the terms of the 1967 Abortion Act, which requires agreement by two doctors that a woman has grounds for

terminating a pregnancy. A report of the, abortion, signed by the two doctors and specifying the grounds for termination, must be made to the Department of Health.