

## Lessons from an audit of unplanned pregnancies

David Metson

### Abstract

To determine the effectiveness of contraceptive use a two year audit of pregnant women registered in one group practice was carried out. The methods of contraception used by women with unplanned pregnancies were studied and the rates of failure assessed. Of the 518 pregnancies during the study, 187 (36%) were unplanned. Unplanned pregnancies were most common in the 15-19 age group (54 out of 187), and women aged under 25 used contraceptives less reliably than women aged 25 and over. The combined pill was the most effective method of contraception in all age groups. The methods that resulted in most unplanned pregnancies were the sheath in women aged 25 and over and incorrect use of oral contraceptive or no contraception in those aged under 25. The fear of side effects was an important reason why women did not use the combined pill, being cited by 22 out of 134 women, and inappropriate medical advice was cited by a further 20 women.

More discussion between doctors and patients and readily available information on the use of oral contraceptives might help to reduce the number of unplanned pregnancies.

### Introduction

The slogan "every child a wanted child" provides an ideal standard for measuring contraceptive care if we believe in the fundamental role of family planning in preventive medicine.<sup>2</sup> Dryfoos, however, estimated that 51% of pregnancies in the United States in 1978 were unplanned.<sup>3</sup> An Australian study in 1981 found that 58% of women who gave birth in one hospital reported either that the pregnancy was unplanned or that they were unsure whether it was planned.<sup>4</sup> Surveys of legitimate births in England and Wales showed that 32% in 1967-8 and 22% in 1975 were unplanned.<sup>5</sup> In 1980 Stott found that 58% of pregnancies were unplanned in a self selected group from an inner London practice.<sup>6</sup>

To improve contraceptive care doctors must be aware of why unwanted pregnancies occur. The immediate cause may be a failure of contraception, but the underlying reason may be ignorance on the part of the patient or poor medical advice. I examined the problem of unplanned pregnancy in this practice with a view to improving family planning.

### Methods

The audit took place between 1 June 1985 and 31 May 1987 in a large group practice in Bracknell, which is a new town about 40 km west of London populated largely by people who have moved there from London. The practice has roughly 14 000 patients registered, who are cared for by six principals and a trainee; all seven doctors participated in the study. Most of the

patients are white and in social classes II, III, and IV. Bracknell has good educational and health resources and low unemployment.

All patients newly reporting pregnancy (including those joining the practice already pregnant) were recruited. Each pregnant woman was asked by the doctor she was consulting whether she had intended to become pregnant; those claiming that they had not were questioned about their use of contraceptives and, when appropriate, the alleged reason for failure of the contraceptive. If appropriate women were also asked why they did not use the combined oral contraceptive.

To relate contraceptive use by women with an unplanned pregnancy to use by patients in the practice as a whole 1442 women aged 15-44 (40% of all those registered in this age group), who consecutively attended the surgery from 1 February to 31 May 1987, were asked for details of the contraception they used. These subjects included women attending as patients and those accompanying their children or other patients. To reduce bias patients were not surveyed at antenatal or postnatal clinics. When women reported that their partner used the sheath on most occasions and that they did not use a contraceptive on the remaining occasions they were classed as using the sheath. The number of women considered to be at risk of unplanned pregnancy was derived by excluding, for example, those who were surgically sterile, trying to conceive, or not sexually active. To calculate the estimated number of woman years at risk the proportion of those at risk in each age group was multiplied by the total number in each age group in the whole practice and then doubled as the audit covered two years.

Rates of contraceptive failure for each age group were derived as: (number of unplanned pregnancies, when contraceptive A used/total number of patients using contraceptive A)  $\times 100/2$ . Thus rates were expressed per 100 woman years, assuming that only one type of contraceptive was used throughout the two years of the survey. The rates of failure were compared among age groups by assessing relative risks and their confidence intervals. The denominators for each risk estimate were themselves estimates so the confidence intervals should perhaps be wider than usual.

### Results

Altogether 518 pregnancies were reported during the study; 187 (36%) were unplanned, and unplanned pregnancies were most common in the 15-19 age group (table I). Sixty four of the 187 pregnancies were terminated. The methods of contraception used at the time of the unplanned pregnancies were: no contraception, 61 women; sheath, 49; combined pill, 27; progesterone only pill, 14; intrauterine device, 12; cap, 12; rhythm, 6; and withdrawal, 6. Of the 49 couples who had chosen the sheath as their method of contraception, 16 had not been using one at the probable time

TABLE I—Unplanned pregnancies and contraceptive used over two years by women at risk

	Age (years)				
	15-19	20-24	25-29	30-34	35-44
No of unplanned pregnancies	54	43	39	30	21
No of woman years of risk	716	662	720	852	1026
Unplanned pregnancy rate (95% confidence interval) (%)	7.5 (5.6 to 9.5)	6.5 (4.6 to 8.4)	5.4 (3.8 to 7.1)	3.5 (2.3 to 4.8)	2.0 (1.2 to 2.9)
% (No) of sample of all women in practice using as contraception*:					
Combined pill	87 (102)	76 (135)	52 (95)	34 (68)	14 (21)
Sheath	5 (6)	7 (12)	11 (20)	25 (50)	26 (39)
Intrauterine device		6 (10)	14 (25)	20 (41)	30 (44)
Progesterone only pill	3 (4)	4 (8)	16 (30)	14 (28)	13 (20)
No contraception	4 (5)	3 (5)	2 (4)	2 (3)	8 (12)
Cap		4 (8)	4 (7)	4 (8)	3 (5)
Withdrawal			1 (1)	1 (1)	5 (7)
Rhythm			1 (2)	2 (3)	1 (1)

\*Sample comprised 830 women: 117 aged 15-19, 178 aged 20-24, 184 aged 25-29, 202 aged 30-34, and 149 aged 35-44.

of conception. In the 27 pregnancies that were due to failure of the combined pill seven women claimed not to have missed any pills, 16 claimed to have missed some pills, and three had had gastroenteritis at the probable time of conception. One patient had been changed from a 50 µg to a 30 µg oestrogen pill without being warned about the risk of pregnancy for the first month.<sup>7</sup> Among the 14 pregnancies that were due to failure of the progesterone only pill six women had forgotten pills, seven claimed that they had not missed any pills, and one had had gastroenteritis. There were 12 pregnancies in women using intrauterine devices, including two ectopic pregnancies.

The 134 women with unplanned pregnancies who had not been using the combined pill, the progesterone only pill, or an intrauterine device were asked why they did not use combined oral contraceptives. When more than one reason was given this was categorised under the most appropriate heading. The most common reasons were fear of side effects or actual side effects, which included obesity, cancer, and heart disease (table II). Twenty women had not used the combined oral contraceptive after receiving inappropriate medical advice; among alleged absolute contra-indications were breast lumps, varicose veins, and cervical erosions.

Of 1442 patients asked about their use of contraceptives, 830 were at risk of unplanned pregnancy,

excluding those who were trying to conceive, surgically sterile, or not sexually active. The age distribution of those surveyed was similar to that in the practice except that patients aged 35-44 were underrepresented. Use of the combined pill predominated in women under 25, with older women relying more on the sheath, intra-uterine device, and progesterone only pill (table I). The combined pill, sheath, and intrauterine device had higher failure rates in those aged under 25 than in those aged 25 and over (table III).

## Discussion

This study showed that over a third of pregnancies presenting to this general practice over two years were unplanned. Disappointingly, unplanned pregnancies were most common in those aged 15-19, of whom over half used either no contraception or extremely unreliable methods. Younger women who used effective means of contraception used them less reliably than women aged 25 and over (table III); this is well recognised.<sup>3,7</sup>

Rates of unplanned pregnancy are difficult to determine as surveys of women attending hospital antenatal clinics do not include women who have had their pregnancy terminated.<sup>4,5</sup> Some studies have tried to overcome this by adding rates of unplanned births to rates of termination, but this is heavily influenced by patterns of referral.<sup>3</sup> By studying a defined population from one general practice we should have reduced these sources of bias.

Failure rates of contraceptives can be calculated accurately only if the number of patients using a particular contraceptive is known. In this study the rates were calculated by assuming that the method reported in the survey was used for the entire two years of the study. Even if this was not the case the number abandoning one method and the number changing to it would probably be similar. I believe that the survey population on which rates of use were based was representative of the practice population because it comprised unselected women consecutively attending routine surgeries and because a fairly large proportion of the practice (40%) was surveyed.

The study identified the important differences in effectiveness of contraceptives between users under 25 and 25 and over. Unplanned pregnancy in younger women tended to be the result of not using any contraception or using the combined oral contraceptive incorrectly. In older women unplanned pregnancies tended to occur in those using the sheath; this, however, reflects the larger number of older women using the sheath. Older women used the sheath more effectively than younger women. Intermittent use of the sheath and missed pills were not infrequent in women under 25.

Of particular concern were the 20 women who were not using the combined pill because of inappropriate medical advice. The definition of this advice is

TABLE II—Reasons given for not using combined pill in 134 unplanned pregnancies, excluding women using intrauterine devices or progesterone only pills

	No
Reluctance to use pills	53
Fear of side effects	22
Actual or perceived side effects	23
Did not specify	8
Lack of motivation	23
Inappropriate medical advice	20
Patient thought she was infertile	10
No information	8
Unexpected or infrequent intercourse	7
Age > 40	3
Stopped taking pill to conceive later	2
Partner claimed to be sterile or using sheath	2
Miscellaneous*	6

\*Patient had been raped (one), was of low intelligence quotient (one), thought amphetamine was a contraceptive (one), had previously conceived while taking pill (one), or was waiting to have a coil fitted (one); or patient's mother had refused consent for her to use pill (one).

TABLE III—Comparison of rates of failure of different methods of contraception

	Rates/100 woman years		Relative risk (95% confidence interval)
	Age < 25	Age ≥ 25	
Combined pill	2.0	0.5	3.8 (1.4 to 9.9)*
Sheath	17.9	6.1	2.9 (1.7 to 5.1)*
Progesterone only pill	7.2	2.5	2.9 (0.9 to 8.8)
Intrauterine device	8.6	1.4	6.1 (1.9 to 20.0)*
Cap	5.4	9.7	1.8 (0.6 to 2.0)
Rhythm		12.9	
Withdrawal		8.7	

\*p=0.05.

backed by other sources.<sup>8-10</sup> Despite correct medical advice some women will still have unwarranted fears about using combined oral contraceptives; this is perhaps not surprising given the dramatic reporting of adverse events<sup>11,12</sup> and the lack of publicity given to some favourable reports.<sup>13</sup>

The results of this study suggest some practical steps for the health care team to minimise unplanned pregnancies—(a) each member of the team should discuss contraception with all teenagers thought to be sexually active; (b) more time should be spent exploring patients' fears of side effects of the contraceptive pill and more emphasis placed on its beneficial health effects to encourage greater use<sup>14</sup>; (c) special attention should be paid to patients' reliability with pill taking, and written instructions should be supplied describing the action to be taken in the event of missed pills; (d) though use of the sheath is being encouraged to reduce the risk of AIDS among those with many partners, our results suggest that in younger women the combined pill is a more effective contraceptive and use of both should therefore be promoted.

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