

Unintended Pregnancy and Childbearing

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PUBLIC HEALTH IMPORTANCE

Unintended pregnancies and births* are attracting national attention as public health problems that are once again on the rise. Although we have witnessed almost two decades of decline since 1965 (1), recent data for women who were ever married indicate that the prevalence of unintended births increased during the 1980s. Preliminary data for 1990 reveal that the level has reached a new high of 39% (Figure 1) (2). This increase suggests a reversal of the trend that we saw from 1965 to 1982.

Because unintended births constitute what appears to be an increasing proportion of all recent births from 1982 to 1990, the health and social costs of this increase could grow. A higher prevalence of unintended pregnancies and births implies that women are unnecessarily being exposed to the risk of additional morbidity and mortality.

A further consequence of unintended births is the postponement of prenatal care. Between

* The following are definitions of some terms used in this chapter (see glossary for additional definitions):

Unintended pregnancies include all pregnancies that were unintended (mistimed or unwanted) at conception—including those that result in live births, miscarriages, stillbirths, and abortions.

Unintended live births include two types of pregnancy outcomes—**mistimed births**, which occur sooner in a woman's life than she had intended and eventually are wanted, and **unwanted births**.

Wantedness status refers to whether the mother considered the pregnancy to be wanted, mistimed, or unwanted at conception.

Recent births are those births occurring within exactly 5 years before the mother's survey interview date for 1982 and 1988 and within 2 years before her interview for the 1990 reinterview survey.

1982 and 1988, the receipt of prenatal care services was more likely to be delayed beyond the first trimester if the birth was unintended. Only about half (55%) of babies that were unwanted received early prenatal care, whereas almost three fourths (72%) of babies that were wanted at conception received such care (3).

Other research suggests that unintended births lead to more child abuse and neglect. In a relevant study of single mothers with very low incomes, Zuravin found that unintended births increased the risk of child abuse and neglect, especially in large families (4).

Unintended births largely result from failures in contraceptive use (5). Unintended births that occur because a woman has failed to use a contraceptive method correctly or because the method itself failed have important implications for family planning programs and for contraceptive development. Method failure indicates the need for better efforts to ensure proper and consistent use of modern methods as well as reliable backups for when these methods fail. Even with the array of effective methods currently available, additional methods are needed to satisfy user preferences. No one method is likely to be **perfect** for a woman over her entire reproductive life.

With mistimed births, factors such as changes in marital status, career crises, and gain or loss of employment can substantially affect the preferred timing of a birth even though it may be wanted eventually. A young woman who becomes pregnant in college at age 19 who really

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wanted to have her first birth at age 23 when she finished college, for example, might experience a need to delay or even terminate her education and career plans.

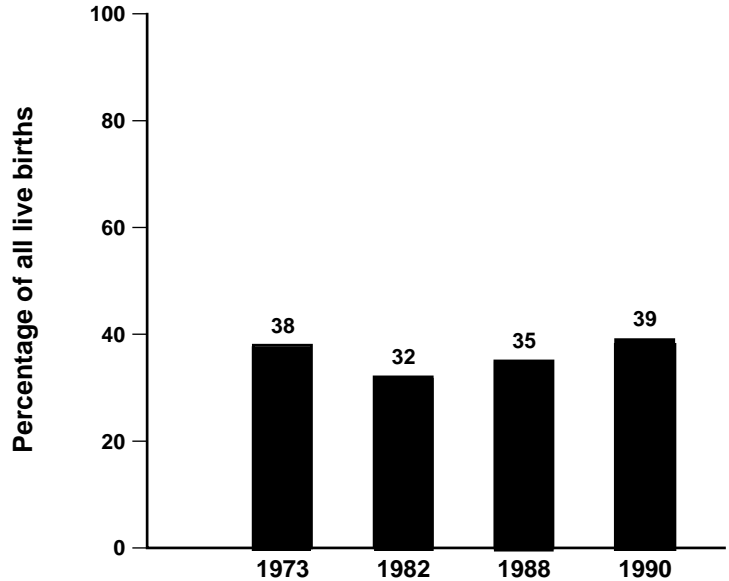
The problem of unintended pregnancies has become more pronounced in recent years because of the shorter duration of time in which women actually want to become pregnant. Women now spend many of their childbearing years trying to avoid unintended pregnancy because they tend to delay marriage and desire smaller families. The fact that many women experience long periods when they do not wish to become pregnant is an important issue for health-care providers and policymakers alike (for additional information about related topics and surveillance activities, see the Contraception, Legal Induced Abortion, Behavioral Risk Factors Before and During Pregnancy, Infant Mortality, and Pregnancy in Adolescents chapters).

HISTORY OF DATA COLLECTION

Since 1973, CDC's National Center for Health Statistics (NCHS) has conducted the National Survey of Family Growth (NSFG), collecting data on the wantedness status of pregnancies. Since then, data from three subsequent cycles of surveys (and a telephone reinterview survey) have allowed intersurvey comparisons and analysis of trends over time. Interviewing for the Cycle V NSFG began in 1994.

The CDC has also collected data on the wantedness status of pregnancies in other national and state surveys. In 1987, CDC collaborated with several states and the District of Columbia to establish an ongoing system for the surveillance of selected maternal behaviors. This system, known as the Pregnancy Risk Assessment Monitoring System (PRAMS), is designed to collect annual data to supplement vital records and to supply states with data to plan and assess their perinatal health programs (6). In 1988, NCHS conducted the first National Maternal and Infant Health Survey (NMIHS). The NMIHS is based on a sample of births in a particular year and focuses on the health of mothers and their infants. This survey is scheduled to be conducted again in 1996.

FIGURE 1. Percentage of recent live births* that were unintended pregnancies to ever-married women aged 15–44 years — United States, 1973–1990



* Births within exact 5 years of interview date.

Source: CDC/NCHS. NSFG, 1973 to 1988. Telephone reinterview, 1990 (preliminary data).

Since 1982, data on the wantedness status of all pregnancies have been collected annually for all female respondents participating in the National Longitudinal Survey of Youth (NLSY). This survey is conducted by the Center for Human Resource Research at the Ohio State University under the administration of the U.S. Department of Labor's Bureau of Labor Statistics. Although these data are constrained by the original 1979 NLSY cohort age-range (14–21 years), when weighted, they represent a national sample of women—aged 25–32 years on January 1, 1990 (or aged 14–21 years on January 1, 1979)—who have had at least one pregnancy (7). Most of the pregnancies in the sample are to younger women; the oldest women in the sample who have had pregnancies reached the age of 32 years by the latest survey.

Questions about whether the pregnancy was wanted, mistimed, or unwanted at conception were asked while the pregnancy was ongoing, in most cases; therefore, the data provide prospective measures of the wantedness status of births. A recent study using the NLSY focused on the wantedness status of first births and looked at the

factors that might be linked to whether a woman says that she wanted her first birth at the time of her pregnancy. The study findings suggest that marital status and race are important predictors of the wantedness status of first births to these women (8).

CDC SURVEILLANCE ACTIVITIES

National Survey of Family Growth

The NSFG has always been a nationally representative sample of women of childbearing age. All women surveyed are from the non-institutionalized population of the United States. Cycles I through IV of the NSFG were based on multistage area probability samples. The 1973 and 1976 surveys interviewed only females aged 15–44 years who were ever married; women of all marital statuses were interviewed for the first time in the Cycle III survey in 1982. In the Cycle IV survey, interviews were conducted from January through August 1988 with 8,450 women of all marital statuses. A telephone reinterview survey was conducted in 1990 on a subsample of 5,686 women who had been interviewed in 1988. Wantedness status information for women in the 1990 survey who were pregnant at the time of the 1988 survey was taken from the 1988 NSFG data tape for the tables presented in this chapter.

Sources of NSFG data include 1) the many NCHS Advance Data and Series 23 reports; 2) journal articles by researchers at NCHS and elsewhere; 3) conference presentations and publications; and 4) public use data tapes and tape documentation (information on how to order these resources can be found in the Contraception chapter).

The NSFG classified unintended pregnancies or births as those that were mistimed or unwanted at the time of conception. The following series of questions in the 1988 survey were used to classify pregnancies as intended (wanted), mistimed, or unwanted at conception:

1. At the time you became pregnant with (baby's name/the pregnancy that ended in month/year), did you yourself, actually want to have a(nother) baby at **some** time?
2. Those who answered “yes” to question 1 were then asked: Did you become pregnant sooner than you wanted, later than you wanted, or at about the right time? Those who answered “no” to question 1 continued with the rest of the questionnaire.
3. In the Cycle IV survey, those who answered “don't know” to question 1 were then asked: It is sometimes difficult to recall these things but, just before the pregnancy began, would you say you probably wanted a(nother) baby at **some** time or probably not?

In the NSFG, pregnancies that were wanted but occurred sooner than the woman would have liked were considered mistimed. A pregnancy was classified as mistimed if the woman wanted a(nother) baby eventually, but not as soon as the pregnancy occurred (for example, she became pregnant at the age of 18 years but actually wanted to have her first child at the age of 21 years).

Pregnancies were labeled unwanted if the woman answered “no” to questions 1 or 3; that is, she reported that she did not or probably did not want a child at any time in the future. If the woman never wanted the pregnancy (for example, she wanted only two children, but became pregnant with her third child), the pregnancy was considered unwanted. Also, a pregnancy was considered unwanted at conception if 1) the woman stopped or did not use contraception for reasons other than trying to get pregnant, or 2) she became pregnant while using contraception and did not want a(nother) baby.

Pregnancy Risk Assessment Monitoring System

Information on various topics is collected from new mothers through a self-administered questionnaire mailed to them 2–6 months after delivery. Topics include the wantedness status of the

birth, including the mother's attitudes and feelings about her pregnancy.

National Maternal and Infant Health Survey

The 1988 NMIHS data on unintended births can be analyzed along with a variety of accompanying health and socioeconomic measures. Women were asked to think back to just before they became pregnant and to state whether they wanted to become pregnant at that time. They also were asked about the outcome, any complications of the pregnancy, employment status around delivery, smoking and other health habits, prenatal care, income, and characteristics of the baby's father (9).

GENERAL FINDINGS

Unintended births are again at levels experienced in the early 1970s (Figure 1). According to 1988 NSFG data, more than one third (39%) of recent births to women of childbearing age, regardless

of their marital status, were unintended (27% of these births were mistimed and 12% were unwanted) (Table 1). Thus, more than two thirds (68%) of the unintended births to women surveyed in 1988 were mistimed.

Between 1982 and 1988, the proportion of unintended births that were unwanted has been much smaller than the proportion of those that have been mistimed, however this proportion has increased for women overall, and also for black and white women (with the exception of white women aged 35–44 years) (Table 1). The percentage of births that were unintended was 36% for white women, but 59% for black women, partially because of the larger proportion of births among unmarried black women. Nevertheless, since 1982, the proportion of births among white women that were mistimed has increased slightly but declined among black women.

Data in the tables shown by race do not imply that differences are related to racial or genetic characteristics of the women per se. Such differences are more likely related to variations in

TABLE 1. Percentage of intended and unintended live births* among females aged 15–44 years, by race and age of mother — United States, 1982 and 1988

Race and age (years)	Total†	Intended		Mistimed		Unintended		Total Unintended	
		1982	1988	1982	1988	1982	1988	1982	1988
All races‡	100.0	63.5	60.6	26.6	26.8	9.8	12.3	36.4	39.1
15–19	100.0	20.7	14.8	64.5	63.4	14.9	21.8	79.3	85.2
20–24	100.0	49.6	45.7	42.7	41.1	8.0	13.0	50.4	54.1
25–34	100.0	71.8	66.6	19.4	23.1	8.8	10.1	28.2	33.2
35–44	100.0	71.8	68.3	10.4	13.5	17.7	18.1	28.0	31.6
White	100.0	66.9	63.8	25.5	26.8	7.7	9.2	33.1	36.0
15–19	100.0	20.7	17.0	71.4	65.3	7.9	17.6	79.3	82.9
20–24	100.0	52.4	49.4	42.3	42.6	5.3	7.7	47.6	50.3
25–34	100.0	74.5	68.2	18.5	23.5	7.0	8.1	25.5	31.6
35–44	100.0	74.0	71.6	10.2	14.0	15.8	14.1	26.0	28.1
Black	100.0	45.1	40.4	32.6	30.2	22.1	29.0	54.7	59.2
15–19	100.0	19.1	11.7	50.9	58.1	30.0	30.2	80.9	88.3
20–24	100.0	38.7	33.8	41.3	35.6	20.0	30.7	61.3	66.3
25–34	100.0	53.1	51.3	25.0	24.4	21.6	23.5	46.6	47.9
35–44	100.0	57.9	38.7	15.7	14.8	24.4	46.5	40.1	61.3

* Includes births occurring <5 years from the date of interview.

† Total includes births of unknown wantedness status.

‡ All races includes white, black and other races. Other races are not shown separately.

Source: National Survey of Family Growth, 1982 and 1988.

income and educational levels, with minority women often being associated with lower income and educational levels, limited access to health care and insurance, and other factors. These socioeconomic differences require further investigation if we are to better understand the underlying causes of these differentials.

The prevalence of recent births that were unintended over all age-groups increased between 1982 and 1988 (Table 1). For black women (except those aged 35–44 years) and white women classified by age in 1988, the percentage of births that were unintended declined with age. The probability of contraceptive failure also declines as women get older, which partially accounts for the decrease in mistimed births among older women (5). However, as has been true for the past decade, most unintended births are mistimed births. Unwanted births cluster at the youngest and oldest age-groups (Table 1).

The highest percentage of births that were unintended among all races, and among black and white women separately, is among females aged 15–19 years. As Trussell observed (10), one out of every 10 women in this age-group become pregnant each year. Data for 1988 reveal that of all recent pregnancies among these young women, roughly five out of six (>85%) are unintended. This is an increase of almost 6 percentage points since 1982. Trussell also notes that only a minority of sexually active teens **always** rely on contraception, and that even fewer of them use the most effective methods.

A comparison of births among black teens aged 15–19 years and white teens indicate that although black teens have about the same level of unintended births as white teens (83% for white teens, 88% for black teens), the proportion of unintended births that were unwanted is almost twice as high for black teens as it is for white teens. Although the proportion is lower among white teens, it is rising. The proportion of births that were unwanted seems to have stabilized at about 30% for black teens; however, this is a high level.

If teens were to have more access to contraceptives, and to better education about how to use those methods effectively, some researchers maintain that there would be a group of teenag-

ers, comprised mostly of poor black and Hispanic women, that still would show little change in the incidence of unintended births. Teens, too, generally are poor at anticipating when intercourse will occur, and thus often are unprepared with respect to birth control. They also are prone to believe that their risk of pregnancy is small (10) (for additional information, see the Pregnancy in Adolescents chapter).

In 1982, about 8% of recent births to women who had ever been married, were unwanted. By 1988, however, this increased to >10% (Table 2). The proportion of births that were mistimed has remained relatively constant since 1973 at about one fourth of all births. In 1988, however, mistimed births were two and one-half times as common (25%) as unwanted births (10%).

Among subgroups of women who had ever been married, the proportion of births that were unwanted increased with age in all three survey years (Table 2). At the same time, the proportion of mistimed births declined with age. Young females who had ever been married (aged 15–24 years), both black and white, had the largest proportion of mistimed births. These unwanted births stayed at a relatively low level, although in 1988, the proportion of births that were unwanted was more than twice as high for blacks as for whites of the same age. Overall, the largest proportion of births that were unwanted occurred among older women aged 35–44 years (18% in 1988). This high figure is an average of all races, inflated by the particularly high proportion of unwanted births among black women aged 35–44 years (44% in 1988).

In a regression analysis of the determinants of unwanted births to ever-married, Williams used NSFG final data from 1973 and 1982 and NSFG preliminary data from 1988 and found that age and income were strong predictors of unwanted childbearing (11). During all survey years, births to women aged ≥ 30 years were much more likely to have been unwanted than births to younger women. These unwanted births tend to be higher order births (e.g., a third birth to a woman who only wanted and already had two babies). Births that were unwanted at conception occurred most often to women at or below the poverty level.

TABLE 2. Percentage of intended and unintended live births* among females aged 15–44 years who have ever been married, by race and age of mothers — United States, 1973, 1982, and 1988

Race and age (years)	Total†	Unintended								
		Intended			Mistimed			Unwanted		
		1973	1982	1988	1973	1982	1988	1973	1982	1988
All races¶										
All ages	100.0	61.6	68.1	64.6	24.0	24.0	24.9	14.3	7.7	10.4
15–24	100.0	52.4	50.5	48.5	39.4	43.8	42.6	8.0	5.7	8.6
25–34	100.0	68.0	74.6	67.7	18.3	18.5	23.1	13.5	6.7	9.0
35–44	100.0	54.7	71.4	69.9	9.5	11.3	12.2	35.6	17.1	17.7
White										
All ages	100.0	64.2	69.6	65.5	23.4	23.6	25.4	12.3	6.7	8.8
15–24	100.0	55.0	51.1	48.9	38.3	44.1	43.4	6.5	4.8	7.4
25–34	100.0	70.3	76.5	68.6	18.0	17.6	23.4	11.6	5.8	7.8
35–44	100.0	57.8	73.2	72.4	9.8	11.2	12.7	32.2	15.6	14.6
Black										
All ages	100.0	40.6	55.6	50.5	28.9	28.1	26.2	30.5	15.9	22.8
15–24	100.0	36.6	45.1	48.1	45.9	40.2	36.3	17.5	14.8	15.6
25–34	100.0	46.4	59.0	53.8	20.1	25.2	26.4	33.4	15.6	19.1
35–44	100.0	31.0	60.9	42.1	5.6	16.6	13.6	63.4	20.4	44.4

* Includes births occurring <5 years from the date of interview.

† Total includes births of unknown wantedness status.

¶ All races includes white, black and other races. Other races are not shown separately.

Source: National Survey of Family Growth, 1973, 1982, and 1988.

Williams (11) notes that “although the national family planning program in this country was initially instituted to target women with incomes at or below poverty level . . . these are the women among whom unwanted childbearing has been increasing.”

Other observers have speculated about the principal reasons for this shortfall: 1) public expenditures for family planning services, after controlling for inflation, have fallen by one third since 1980 (12); and 2) increasing clinic costs and funding cuts have weakened the ability of family planning clinics to provide clients with services, particularly contraceptive services and sexually transmitted disease screening and treatment to low-income women and teenagers (13,14).

INTERPRETATION ISSUES

Women at Risk

Not all women are at risk of an unintended pregnancy at a given point in time. NSFG data show

that in 1988, about 33% of females aged 15–44 years were not at risk of an unintended pregnancy at the time of the survey. Several reasons for this include 1) the women had never had intercourse (almost 12%); 2) they were not currently having intercourse (7%); 3) they were pregnant, had just delivered, or were trying to become pregnant (9%); or 4) they were sterile for noncontraceptive reasons, such as a hysterectomy (6%). These proportions vary depending on the age of the woman and reflect different patterns of reproductive behavior by age-group (15). The remaining 67%—roughly 39 million women—were at risk of a mistimed or unwanted pregnancy.

Abortion Underreporting

Most studies of unintended pregnancy focus on live births, because not all surveyed women report all of the abortions that they have had. Abortion underreporting has been a significant problem in fertility surveys in the United States and worldwide. In the NSFG, for example, only about 35% of the estimated number of abortions that occurred in the United States from 1984

through 1987 were actually reported in the 1988 survey (5).

In reports using the 1988 NSFG data, pregnancies were presented in two ways: 1) the total of live births, miscarriages, and stillbirths only, and 2) the total of live births, miscarriages, stillbirths, and abortions, adjusted for underreporting of abortion (Table 3).

These data indicate that >40% of live births, miscarriages, and stillbirths—some 9 million pregnancies—were unintended. Moreover, 39% of live births occurring within 5 years of the interview were unintended. We know that underreporting of abortion necessarily implies the underreporting of unintended pregnancies, primarily those resulting from failures in the use of contraceptive methods (5). To account for this factor, virtually all reported pregnancies that ended in abortion were assumed to be unintended. The number of abortions was then adjusted to estimate the total proportion of pregnancies that were unintended, as follows:

- The total (reported) number of live births and miscarriages/stillbirths was first calculated.

- Recent data were used to estimate the number of abortions that were unreported, by taking the number of total abortions for 1984 through 1988 (16) and subtracting the number of abortions that were reported in the 1988 survey.
- Of all the pregnancies ending in abortion that were reported, 100% were assumed to be unintended, or 2,885,000 pregnancies ending in abortion (the actual reported percentage was not 100, although it was close because 1) some women did not understand the question properly, 2) they had **wanted pregnancies** that ended in therapeutic abortion because of fetal defects, or 3) they had **wanted pregnancies** that ended in abortion because their relationships with their partners dissolved).
- Of all the pregnancies ending in abortion that were unreported (4,927,000), all were assumed to be unintended. The estimated totals for reported and unreported abortions were then added, producing a total of 7,812,000 unintended pregnancies ending in abortion.

TABLE 3. Number of recent pregnancies* among females aged 15–44 years, by wantedness status of pregnancies at conception and pregnancy outcomes — United States, 1988

	Total [†]	Unintended	
	N (in thousands)	Percentage	N (in thousands)
Total[§]	22,791	40.5	9,226
Live births	18,910	39.2	7,406
Miscarriages and stillbirths	3,881	46.9	1,820
Total[¶]	30,603	55.9	17,038
Live births	18,910	39.2	7,406
Miscarriages and stillbirths	3,881	46.9	1,820
Abortions**	7,812	100.0	7,812

* Pregnancies completed <5 years from the date of interview.

† Total includes intended and unintended pregnancies and pregnancies of unknown wantedness status. Totals may not add exactly due to rounding.

§ Total excludes abortions and current pregnancies.

¶ Total excludes current pregnancies.

** Estimated, adjusted for underreporting. Assumes 100% of abortions are unintended pregnancies.

Source: National Survey of Family Growth, 1988 (16).

- When the adjusted number of unintended pregnancies ending in abortions was added to the total of live births, miscarriages, and stillbirths, an estimated 55.9% of all pregnancies were found to be unintended—approximately 17 million recent pregnancies between 1984 and 1988.

In sum, more than half of all recent pregnancies to women of childbearing age were unintended, compared with 39% of live births.

Retrospective vs. Prospective Data

The NSFG is a cross-sectional survey and therefore must rely on women to report retrospectively what they felt about the wantedness status of a pregnancy at conception. The NLSY is now attempting to measure intentions very close to the actual time of conception and to prospectively track the pregnancy through to its outcome, instead of collecting the wantedness status retrospectively (17). In future telephone reinterviews, the NSFG will attempt to make such measurements for a national sample of females covering the entire range of reproductive ages (15–44 years).

EXAMPLES OF USING DATA

A special feature of the population-based PRAMS is that it provides state-specific data on unintended births. With these data, states can plan and assess programs for subgroups of women at risk of having unwanted or mistimed births. PRAMS also enables states to compare data from their home state with data from other PRAMS states.

At least one state has used PRAMS data to assess the characteristics and outcomes of teen mothers. Data for Oklahoma show that more than two thirds (68%) of teen births are unintended at the time of conception (18).

Data from the Oklahoma PRAMS have also been used to assess the characteristics of women with unintended pregnancy, including behaviors conducive to poor pregnancy outcomes (19). After finding that 44% of live births are unintended at conception, the Oklahoma

family planning program adjusted its priorities to meet the increasing demands in clinics and, ultimately, to achieve the year 2000 objective of reducing unintended pregnancies to no more than 30% of all pregnancies.

The principal limitations of PRAMS are that 1) not all states are included (only about 13 states and the District of Columbia at present), and 2) the data are not available for public use because they belong to the individual states.

FUTURE ISSUES

National objectives for the year 2000 include targeting women at risk of unintended pregnancies and curbing the level of teenage pregnancy. The goals are to improve family planning by 1) reducing the number of teenage pregnancies by 30%, to a maximum of 50 per 1,000 girls aged <17 years (objective 5.1); and 2) reducing the proportion of all pregnancies that are unintended to 30% (objective 5.2). Currently, an estimated 56% of all recent pregnancies are unintended (Table 3) (20).

Cycle V of the NSFG, which began field interviews this year, is one of the major surveys that will provide future data on unintended pregnancy. The interest that funding agencies have taken in unintended childbearing has meant valuable support for continued survey research in this area. Another round of surveys that will provide data on the intention status of pregnancies is the series of Fertility and Family Surveys, which have been under way in several countries in Europe. These surveys are being coordinated, with assistance from NCHS, by the United Nations Economic Commission for Europe (ECE) in ECE member countries. Many of these countries' surveys will include questions on the wantedness status of pregnancies and on contraceptive use.

CDC currently is undertaking a reproductive health telephone survey of about 3,000 women aged 18–44 years in Arizona; Mexican-American women will be oversampled. All women who have ever been pregnant are being asked a standard set of questions on the wantedness status of pregnancy as well as a new test question

designed to allow them to hear all of the wantedness status options in one question. CDC also plans to continue supporting PRAMS, which includes questions regarding the intendedness of pregnancy.

In the future, efforts should focus on improving the reliability of birth control method use. Although modern contraceptive use was at a high level, the percentage of births that were unintended increased. Many of these unintended pregnancies could have been prevented with proper and consistent use of reliable contraception. At present, although highly effective, reversible contraceptive methods exist, we have no guarantee that they will be used correctly during every act of sexual intercourse. Reversible methods for which data are available have contraceptive failure rates ranging from 8% (the pill) to about 25% (periodic abstinence or spermicides) in the first year of use (5).

One of the greatest challenges for health-care providers will be to help women cope with prolonged exposure to the risk of unintended pregnancy and to help them successfully plan their pregnancies. Because more women want fewer children and are delaying childbearing, the average length of time they plan to be pregnant is significantly diminished. A great number of women in the United States, therefore, spend several years trying to avoid unintended pregnancies and births, and many are not succeeding.

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