

# U.S. Women's One-Year Contraceptive Use Patterns, 2004

By Jennifer J. Frost,  
Susheela Singh  
and Lawrence  
B. Finer

Jennifer J. Frost is senior research associate, Susheela Singh is vice president of research, and Lawrence B. Finer is director of domestic research—all with the Guttmacher Institute, New York.

**CONTEXT:** Unintended pregnancies occur far too often in the United States, and half occur when couples fail to practice contraception. Improved measures of the continuity of women's contraceptive use, nonuse and switching patterns can help identify ways to reduce unintended pregnancy.

**METHODS:** A nationally representative sample of 1,978 adult women at risk of unintended pregnancy was surveyed by telephone in 2004. Respondents provided detailed information about contraceptive use and periods of stopping or switching methods during the past year. A typology of patterns of contraceptive use was created, classifying women into mutually exclusive categories according to their exposure to pregnancy risk.

**RESULTS:** Twenty-three percent of women at risk of unintended pregnancy were exposed to a high risk of pregnancy because of gaps in contraceptive method use in the year prior to the survey—8% were consistent nonusers, and 15% experienced 1–11 months of nonuse while at risk. More than half of women used a method during each of the previous 12 months—38% used the same method or methods all year, and 24% switched methods. Fifteen percent of women had gaps in contraceptive use when they were not at risk. Women reported a variety of reasons for their gaps in contraceptive use, including method-related difficulties and side effects, infrequent sex and being ambivalent about avoiding pregnancy.

**CONCLUSIONS:** Strategies for reducing gaps in contraceptive use include improved counseling to help women both choose the right method and continue method use, especially when they have periods of infrequent sexual activity or are experiencing method-related side effects or problems.

*Perspectives on Sexual and Reproductive Health, 2007, 39(1):48–55, doi: 10.1363/3904807*

Unintended pregnancies occur far too often among U.S. women and couples, and the level has remained high throughout recent decades. Approximately half (49%) of all pregnancies are unintended.<sup>1</sup> And although some unintended pregnancies result from method failure, the majority occur when couples fail to use a method (even though they do not want to have a child) or use a method inconsistently or incorrectly. Among women who had an unintended pregnancy in 2001, 52% had not been using a method during the month of conception. Clearly, not using a method at all is an important contributor to unintended pregnancy. In 2002, 16% of U.S. women at risk of unintended pregnancy\* reported not having used a contraceptive method in the previous month<sup>2</sup>—a proportion greater than that in 1995 (12%) and comparable to the levels of nonuse reported by similar women in 1982 (17%) and 1988 (15%).<sup>3</sup>

It is important, however, to remember that use and nonuse of contraceptives vary over time and may occur among different women for different reasons over the course of a year. Most analyses of contraceptive use

present point-in-time measures, leading some readers to conclude that nonusers are a static group who, for various reasons, are unable or unwilling to obtain and use methods. In fact, it is likely that many “nonusers” have used a method at some point during the past year, and some “current users” have experienced periods of nonuse, during which they were at risk of unintended pregnancy. These patterns are important to untangle, as the types of interventions needed to reduce levels of contraceptive nonuse differ depending on whether nonuse is a long-term pattern or a temporary state precipitated by method or relationship changes, access difficulties or other short-term changes in women's lives.

Evidence for variation in method use and nonuse over time can be found in analyses of the 1995 National Survey of Family Growth (NSFG) that examine sporadic method use<sup>4</sup> and contraceptive discontinuation and switching.<sup>5,6</sup> These studies reveal that periods of nonuse, sporadic use or switching from method use to nonuse are relatively common among women, and that they occur more frequently among young women and those in less stable sexual partnerships than among others. Not surprisingly, compared with women with uninterrupted method use, nonusers and sporadic users are much more likely to experience an unintended pregnancy during the year.<sup>4</sup>

\*A woman is at risk if she is sexually active and not currently pregnant, postpartum or trying to get pregnant, and neither she nor her partner has been contraceptively sterilized or is otherwise infertile.

In this article, we provide an overview of women's contraceptive method use patterns over a one-year period. We first develop a typology that classifies them according to their level of potential exposure to the risk of unintended pregnancy and then apply it to new, nationally representative data about women's experiences with contraceptive methods. This typology enables us to better measure the size of groups with the highest level of exposure, intermediate exposure or little to no exposure. What proportion of women who are at risk of unintended pregnancy experience any period of contraceptive non-use during a year's time? What proportion of women remain at risk of unintended pregnancy for the whole year, and what proportion stop and start method use because they are not continuously at risk of pregnancy? What proportion use one contraceptive method continuously throughout the year, and what proportion switch methods during the year, without a period of nonuse?

In addition, we examine the relationship between the pattern of use and women's choice of methods and switching behaviors. Do women at greater risk of unintended pregnancy differ from those at lower risk with regard to their choice of methods and behaviors? A forthcoming analysis examines the factors that are associated with different patterns of method use—assessing the bivariate and multivariate relationships between method use patterns and a range of explanatory factors, including socioeconomic status, relationship characteristics, women's attitudes and motivations related to contraceptive use and pregnancy avoidance, and their experiences with methods and with service providers.<sup>7</sup>

This article is based on data from a 2004 nationally representative telephone survey designed to measure patterns of contraceptive method use over the last year and to obtain detailed information on a range of factors expected to be related to contraceptive use. Some of the measures are similar to those available in the 2002 NSFG, including the detail on the patterns of method use and nonuse that are presented in this article; however, our survey was designed to explore explanatory factors in more depth for the population of nonsterilized adult women at risk of unintended pregnancy (a group that comprises fewer than half of the universe of women included in the NSFG<sup>2</sup>). Compared with the NSFG, this survey provides more information on issues such as the reasons women report for method discontinuation and nonuse, problems and side effects related to method use, satisfaction with method use, motivation to avoid pregnancy, experiences with incorrect and inconsistent method use, and experiences with contraceptive service providers.

## METHODS

### Data Collection

A nationally representative sample of eligible respondents was identified through list-assisted, random digit dial sample generation and a two-stage sampling procedure.\*

Women aged 18–44 who were at risk of unintended pregnancy were eligible for the survey. Because we were examining risk status over the past 12 months, all women who reported having had sex with a man in the past year were potentially eligible for the study. Some of these women, however, had not had sex in the past month or more and were classified as not currently at risk. In addition, some respondents had had periods when they were not at risk because of a pregnancy or sexual inactivity.

Those who reported having been sterilized were excluded, because our primary goal was to identify ways to improve contraceptive use by examining women's experiences with noncontinuous or inconsistent method use. The small proportion of all sterilized women who had had their sterilization in the past year might have been considered eligible, but the difficulty of screening for this characteristic could not be justified, given the extremely small estimated number of such cases.

In total, nearly 95,000 telephone numbers were screened for inclusion in the study; however, about half were not households. Of the 48,000 dwellings that were likely to be households, we screened 28,588 (60%) for the presence of an age-eligible woman; the others refused to answer the screening questions (15%), failed to begin or complete the screening after multiple callbacks (23%) or could not communicate with the interviewers (2%). Some 5,593 households (20%) included a woman aged 18–44.† Of those women, 5,322 were fully screened, 2,670 of whom were eligible to participate in the survey. In all, 2,000 women completed interviews, for a completion rate of 75%; the net response rate was estimated to be 43%.‡

---

\*To improve efficiency, we used standard techniques to identify and exclude nonworking or nonresidential numbers. After a random digit dial sample was generated from the universe of all potential U.S. telephone numbers, the sampled numbers were automatically dialed and electronically screened for tones that indicate that a number is disconnected, is not in use, is for a modem or fax, or has a privacy manager. Also, live operators identified nonresidential numbers.

†According to Current Population Survey data and other data from the Census Bureau, about 45% of households include a woman aged 18–44 (source: Albright V and Bye L, Field Research Corp., San Francisco, personal communication, Mar. 25, 2004). Our finding of 20% is likely due, in part, to respondents' denying the presence of an adult female in the household. The likelihood of respondents' opting out in this manner has increased over time: In studies we conducted in 1995 and 1998 using a similar methodology, 36% and 27% of household, respectively, reported the presence of a woman of reproductive age (sources: unpublished tabulations of the 1995 Alan Guttmacher Institute Survey of Low-Income Women and the 1998 National Microbicide Survey). This trend is consistent with a general decline in cooperation with telephone surveys over the past decade fueled by the rise in telemarketing (source: Albright V and Bye L, Field Research Corp., San Francisco, personal communication, Mar. 25, 2004).

‡Net response was calculated by multiplying the completion rate among known eligible women (2,000/2,670=75%) by the household screening completion rate (28,588/48,000=60%) and the age-eligible screening completion rate (5,322/5,593=95%).

Trained interviewers conducted fieldwork using a computer-assisted telephone interview system. Rigorous attempts were made to follow up with eligible respondents on weekdays, weekends and evenings; as many as 25 telephone calls were made to each household to complete an interview. Women were asked to provide detailed information on a range of topics, including contraceptive use patterns, personal characteristics, sexual relationship and partner characteristics, socioeconomic characteristics and experiences with contraceptive service providers. In addition, women answered questions about their reasons for use or nonuse of contraceptives. On average, interviews lasted 30 minutes.

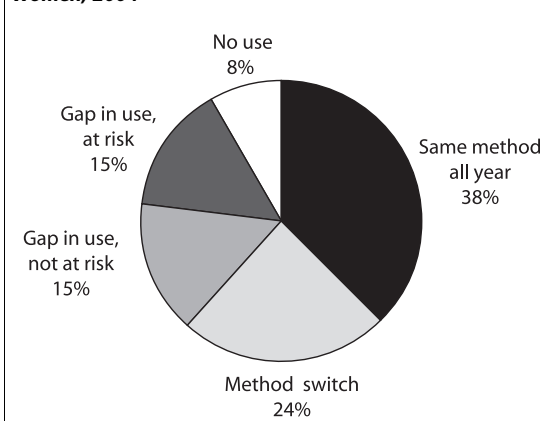
During data cleaning, we identified 22 respondents who were not at risk of unintended pregnancy: Two had had sterilization operations not identified during screening, and 20 gave responses to several questions later in the survey indicating that they were infertile. These women were excluded from the analysis.

### Analysis

Although our methodology was designed to produce a nationally representative sample of all U.S. women at risk of unintended pregnancy, sampling error and differential response may have led to some subgroups' being overrepresented or underrepresented in the final data set. Therefore, we conducted separate tabulations of the 2002 NSFG, selecting women according to our same eligibility criteria, and compared the distributions of women in our sample with those from the NSFG on key demographic characteristics. Greater proportions of the women in our sample than in the NSFG were older than 30 (55% vs. 46%), currently married (61% vs. 48%) and Latina (18% vs. 15%). Thus, to provide a more accurate picture of U.S. women's contraceptive use patterns and characteristics, we constructed weights based on the national distribution of women from the 2002 NSFG according to age, marital status, race and ethnicity.\*

On the basis of women's responses to a series of questions about contraceptive methods used, the timing of use and nonuse, and sexual activity and pregnancy during periods of nonuse in the past year, we created a typology that classified respondents into five mutually exclusive groups: continuous users who did not switch methods, continuous users who switched methods at least once, noncontinuous users who had gaps in use when they were not at risk of unintended pregnancy, non-

**FIGURE 1. Percentage distribution of women aged 18–44 at risk of unintended pregnancy, by pattern of contraceptive use in past 12 months, Guttmacher National Survey of Women, 2004**



continuous users who had gaps in use when they were at risk of unintended pregnancy and continuous nonusers.

To examine switching, we excluded consistent nonusers and grouped users according to method type and patterns of use. We combined methods into three broad categories: hormonal and long-acting, barrier and traditional, and no method.† We grouped women according to the method type they had used at the start of the year, the method type they had discontinued and the method type they had used at the end of the year. Dual- or multiple-method users were classified according to their most effective method.‡

We present descriptive data for all women according to our typology of method use, the specific methods used and women's pattern of switching between methods. The association between pattern of method use and women's method choice and switching behavior was tested at the bivariate level, using two-tailed t tests with significance of .05 when making comparisons between proportions of women in each group. All tabulations were performed using SPSS, version 13. We adjusted t tests for multiple comparisons using the Bonferroni correction factor.<sup>8</sup>

### RESULTS

Of the 1,978 adult women at risk of unintended pregnancy who were surveyed, 32% were aged 18–24, 40% were aged 25–34 and 28% were aged 35–44. Two-thirds were non-Hispanic white, and one-third were women of color (13% black, 14% Latina and 6% Asian or members of other racial or ethnic groups). Forty-eight percent had family incomes above 250% of the federal poverty level, 27% had family incomes between 100% and 249% of poverty, and 15% had family incomes less than 100% of poverty; 10% were unable or unwilling to provide income data. Forty-eight percent of all women were currently married, and 61% had had at least one child.

#### Pattern of Method Use

More than half of women had used a contraceptive method during each of the 12 months prior to the interview (Figure 1): Thirty-eight percent reported

\*The calculated weights were between 0.5 and 1.5 for 37 of the 58 groups categorized by age, race and marital status. The weights were between 2.0 and 2.8 in six groups, and exceeded 3.0 in one.

†Hormonal and long-acting methods are the pill, injectable, IUD, implant, patch and ring; barrier and traditional methods are condoms, the diaphragm, spermicides, withdrawal and natural family planning.

‡Hormonal and long-acting methods were considered more effective than barrier and traditional methods, which were considered more effective than no method.

continuous use of the same method or methods every month, and 24% reported having used a method every month, but had switched methods at least once. Nearly one in four women, however, reported being unprotected for at least one month during the past year: Eight percent were consistent nonusers, and 15% were sexually active users who experienced one or more gaps in method use while at risk of unintended pregnancy. Fifteen percent of women reported a gap in method use during a period when they were pregnant or not sexually active.

Among users who had had gaps in use when they were not at risk of unintended pregnancy, about half (7% of all women) used the same method during all the months they were at risk, whereas the other half (8% overall) switched methods (not shown). Among continuous users who had changed methods during the year, one-quarter (6% overall) switched from one method to another, and three-quarters (19% overall) switched from single- to dual-method use or vice versa.

### Contraceptive Method Mix

Eighty-three percent of all women at risk of unintended pregnancy had used a contraceptive method in the month prior to the interview (Table 1); 9% were not currently using a method but had used one in the past year, and 8% had not practiced contraception in the past year. Among women who had had gaps in use when they were not at risk of unintended pregnancy, 24% were current nonusers; in contrast, the proportion currently not using a method was 36% among women who had had gaps in use when they were at risk of unintended pregnancy.

Among women who were currently using a contraceptive method, 38% reported that their method was the pill, 32% male condoms, 7% an injectable, 6% the patch or ring, 5% an IUD or implant, and 12% other methods (mainly natural family planning and withdrawal). The mix of methods varied by women's pattern of use. Among women who had experienced a gap in use when they were at risk of unintended pregnancy, 22% currently used the pill, and 24% other, less effective methods, such as withdrawal or natural family planning. In comparison, among women who had practiced contraception all year (same or switched method), 41–42% currently used the pill and 10–12% used other, less effective methods. Some 44% of women who had experienced a gap in use when not at risk of unintended pregnancy reported current condom use, compared with 31% of continuous users of the same method and 28% of women who had switched methods. And 7% of continuous users of the same method reported current use of an IUD or implant, compared with 3% of women who had switched methods and 2% of women who had experienced a gap in use when not at risk.

Twenty-nine percent of current users reported current use of more than one contraceptive method: Twelve percent were using a hormonal or long-acting method with condoms, 4% a hormonal or long-acting method

**TABLE 1. Percentage distribution of all women at risk of unintended pregnancy, by contraceptive use in past 12 months; and percentage distribution of current users, by method—all according to pattern of use in past 12 months**

Measure	All (N=1,978)	Same method (N=790)	Method switch (N=446)	Gap in use, not at risk (N=286)	Gap in use, at risk (N=288)
<b>ALL WOMEN</b>					
<b>Contraceptive use</b>					
Current	82.9	100.0	100.0	75.7	64.3
Use in past year, no current use	9.0	0.0	0.0	24.3	35.7
No use in past year	8.1	0.0	0.0	0.0	0.0
<b>CURRENT USERS</b>					
<b>Most effective method</b>					
Pills	37.9	40.8	42.1	33.3	21.7*,†
Male condoms	32.2	30.9	27.7	44.3*,†	34.4
Injectable	7.1	7.4	7.5	6.6	5.8
Patch/ring	5.7	1.7	9.6*	6.6*	10.1*
IUD/implant	4.9	7.2	2.9*	1.8*	4.2
Other	12.1	11.9	10.1	7.5	23.8*,†,‡
<b>Dual use</b>					
Any	28.8	27.1	31.4	27.2	31.2
Hormonal/long-acting and condom	12.3	13.2	14.4	7.5	9.5
Hormonal/long-acting and any other	3.7	2.1	5.4*	5.3	3.7
Condom and less effective	8.8	7.1	8.2	12.7	12.6
All less effective	4.0	4.6	3.6	1.8	5.8
None	71.2	72.9	68.6	72.8	68.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

\*Significantly different from percentage for same method at  $p < .05$ . †Significantly different from percentage for method switch at  $p < .05$ . ‡Significantly different from percentage for gap in use, not at risk at  $p < .05$ . Notes: Ns are unweighted. All women include those who used no method in the previous year. Hormonal and long-acting methods are the pill, injectable, IUD, implant, patch and ring. "Other" methods were primarily natural family planning and withdrawal, but also included spermicide, female condom and diaphragm.

with any other method, 9% condoms with another, less effective method and 4% other, less effective methods. For the most part, differences in dual use according to pattern of use were not statistically significant.

### Switching Patterns

Overall, 56% of women at risk of unintended pregnancy who had used a method during the past year began the year using a hormonal or long-acting method (Table 2, page 52); 17% had stopped use of this type of method during the year, and 50% were using one at the time of the survey. Three-quarters of women who switched methods during the year, began the year using a hormonal or long-acting method, compared with four in 10 women with gaps in method use and six in 10 women who used the same method continuously.

Forty percent of women who had used a method at all during the year started the year using a barrier or traditional method, and the same proportion ended the year doing so; 27% discontinued barrier or traditional method use during the year. Four percent of women who had used a method at all during the past year were nonusers at the start of the year, and 10% were nonusers at the time of the survey.

A greater proportion of women who had had gaps in use when they were not at risk of unintended pregnancy than of women who had had gaps when they were at risk

**TABLE 2. Percentage distribution of all women at risk of unintended pregnancy who had used a contraceptive method in past 12 months, by method type, according to pattern of use**

Method type	All (N=1,810)	Same method (N=790)	Method switch (N=446)	Gap in use, not at risk (N=286)	Gap in use, at risk (N=288)
<b>Used at start of year</b>					
Hormonal/long-acting	56.3	57.1	75.5*	39.1*,†	41.2*,†
Barrier/traditional	39.7	42.9	24.5*	43.7†	51.7†
None	4.0	0.0	0.0	17.2	7.1‡
<b>Discontinued during year</b>					
Hormonal/long-acting	16.8	0.0	32.3	22.2†	28.6
Barrier/traditional	27.0	0.0	53.0	37.4†	42.5†
No discontinuation	56.2	100.0	14.7	40.4†	28.9†,‡
<b>Used at end of year</b>					
Hormonal/long-acting	50.2	57.1	62.3	36.8*,†	26.8*,†
Barrier/traditional	40.0	42.9	37.7	39.1	37.6
None	9.8	0.0	0.0	24.2	35.6‡
Total	100.0	100.0	100.0	100.0	100.0

\*Significantly different from percentage for same method at p<.05. †Significantly different from percentage for method switch at p<.05. ‡Significantly different from percentage for gap in use, not at risk at p<.05. Notes: Ns are unweighted. Hormonal and long-acting methods are the pill, injectable, IUD, implant, patch and ring. Barrier and traditional methods are condoms, the diaphragm, spermicides, withdrawal and natural family planning.

began the year with a period of nonuse (17% vs. 7%). At the end of the year, however, the opposite was true: A greater proportion of women who had had gaps in use when they were at risk than of those who had had gaps

**TABLE 3. Percentage of all women at risk of unintended pregnancy who had used a contraceptive method in past 12 months, by characteristics of method switching, according to pattern of use**

Characteristic	All	Same method	Method switch	Gap in use, not at risk	Gap in use, at risk
<b>TYPE OF METHOD</b>					
<b>No switch</b>					
Hormonal/long-acting	44.1	57.1	54.3	21.3*,†	18.3*,†
Barrier/traditional	29.3	42.9	16.6*	20.7*	24.4*
<b>Switched to hormonal/long-acting</b>					
From barrier/traditional (+)	4.1	0.0	8.0	7.3	4.4
From none (+)	2.0	0.0	0.0	8.3	4.1‡
<b>Switched to barrier/traditional</b>					
From hormonal/long-acting (-)	8.7	0.0	21.2	9.0†	10.2†
From none (+)	2.0	0.0	0.0	9.0	3.1‡
<b>Switched to nonuse</b>					
From hormonal/long-acting (0)	3.5	0.0	0.0	8.7	12.5
From barrier/traditional (0)	6.3	0.0	0.0	15.7	23.1‡
<b>TYPE OF SWITCH</b>					
No switch in method type	73.4	100.0	70.9	42.1†	42.4†
To more effective method	8.1	0.0	8.0	24.8†	11.9‡
To less effective method	8.7	0.0	21.2	8.9†	10.2†
To no method	9.8	0.0	0.0	24.2	35.6‡
Total	100.0	100.0	100.0	100.0	100.0

\*Significantly different from percentage for same method at p<.05. †Significantly different from percentage for method switch at p<.05. ‡Significantly different from percentage for gap in use, not at risk at p<.05. Notes: Ns are unweighted. Hormonal and long-acting methods are the pill, injectable, IUD, implant, patch and ring. Barrier and traditional methods are condoms, the diaphragm, spermicides, withdrawal and natural family planning. + =switching from a less effective method of pregnancy prevention to a more effective one. - =switching from a more effective method of pregnancy prevention to a less effective one. 0 =switching from some method to no method.

when they were not at risk were not using a method (36% vs. 24%).

Overall, three in four women had used the same method all year or had switched within the same method group (44% hormonal or long-acting and 29% barrier or traditional—Table 3). Among continuous contraceptive users who had switched methods, 71% had switched within the same method group (54% hormonal or long-acting and 17% barrier or traditional). In contrast, 42% of women who had had gaps in use had used only one method type throughout the year (18–21% hormonal or long-acting, and 21–24% barrier or traditional).

Among women who had used a contraceptive in the last year, more than one-quarter switched from one method type to another during the year. Six percent began using a hormonal or long-acting method (4% switched from using a barrier or traditional method, and 2% from no method), 11% became barrier or traditional method users (9% switched from using a hormonal or long-acting, and 2% from no method) and 10% became nonusers (4% switched from using a hormonal or long-acting method, and 6% from a barrier or traditional method).

We regrouped women according to whether the method they had switched to was more or less effective than their previous method. Overall, 8% had switched to a more effective method, and 19% to a less effective method or to no method. Among women who had had gaps in contraceptive use when not at risk of unintended pregnancy, 25% had switched to a more effective method and 33% to a less effective method or to no method. In contrast, 12% of women who had had gaps in contraceptive use when at risk of unintended pregnancy had switched to a more effective method and 46% to a less effective method or to no method.

**Gap Length and Reasons for Nonuse**

Among the 30% of women in our sample who had experienced a gap in contraceptive use during the previous year, two-thirds had had a gap of 1–6 months, and one-third a gap of seven or more months. On average, women's gaps were five months long.

Women whose gaps had occurred when they were not at risk of unintended pregnancy were either pregnant (33%) or not sexually active (66%) during the gap. Women who had experienced gaps when they were at risk reported a number of reasons for their nonuse—most commonly, problems accessing or using methods (40%). These problems included difficulties paying for a method (5%), lack of time for medical visits to get a method (5%), problems or side effects using a method (17%) and not liking any available method (5%). Among women who had used no method all year, only 24% reported problems accessing or using methods as a reason for nonuse.

Infrequent sexual activity was another commonly cited reason for nonuse: Nineteen percent of women whose gaps had occurred when they were at risk of unintended pregnancy and 29% of nonusers said that infrequent

sexual activity was their main reason for method nonuse. In addition, 18–21% of women from both groups reported that nonuse was because of ambivalence about becoming pregnant; 6–7% reported that nonuse was related to their belief that they could not get pregnant.

Finally, gaps in contraceptive use were found to have coincided with certain types of life events. More than half of women who had experienced a gap when they were at risk of unintended pregnancy reported that one or more of the following events had coincided with their nonuse: beginning or ending a relationship (26%), moving to a new home or community (22%), stopping or starting a job (21%), or having a personal crisis (22%).

## DISCUSSION

This study is unique because it provides detailed information on women's contraceptive use patterns over an entire year, as well as information on reasons for nonuse among women who experienced gaps in method use while at risk of unintended pregnancy. Together, this information allows us to examine the relationship between women's pattern of use over the past year and their reasons for nonuse, and to assess the size of groups of women with different patterns of use. With this new information, we can suggest ways to improve use that can be directed toward each group.

To assess the validity of our basic findings about the distribution of women according to contraceptive use patterns, we compared our data with data from the NSFG. Among our respondents, 17% were not currently using a contraceptive method; the proportion among comparable NSFG respondents was 16%.\*

Exclusion of sterilized women produced a slightly greater proportion of women not using contraceptives than would have been found had sterilized women been included. (In the NSFG, the proportions of similar women not using contraceptives were 16% when sterilized women were included and 11% when sterilized women were excluded.<sup>2</sup>) Exclusion of these women, by definition, also decreased the number and proportion of women in the most protected group—those who continuously used the same contraceptive method all year. On the other hand, excluding sterilized women from the pool of women who are at risk of unintended pregnancy is consistent with other studies that measure the numbers of women who are in need of contraceptive services and supplies.<sup>9</sup> And because our key interest was to identify ways that programs or policies can help women use contraceptives more consistently and correctly, we focused on the subgroup of women most relevant to the analysis—those who are at risk of unintended pregnancy and are in need of contraceptive services and supplies. Sterilized women, who may continue to need care for other reasons, no longer need services and supplies for the prevention of unintended pregnancy.

## Exposure to Risk

Among our national sample of nonsterilized adult women at risk of unintended pregnancy, 77% had used a contraceptive method every month of the past year in which they were at risk of unintended pregnancy. Women who had continuously used the same method were the most protected, but still were at some risk of unintended pregnancy, because no method is 100% effective even when used correctly and consistently, and because some women do not use their method correctly or consistently.<sup>10</sup> Women who had switched methods during the year were also at some risk of unintended pregnancy, because of reasons discussed above and because periods when women are learning to use a new method or are restarting use of a method may be associated with incorrect or inconsistent use, or with other problems. In addition, a method change may coincide with a life-changing event, such as a new relationship, which itself may increase the risk of incorrect or inconsistent use. Finally, women who switch methods may experience short (i.e., less than one-month) gaps in use after stopping one method and before beginning the next.

The 15% of women who experienced gaps in contraceptive use during the past year when they were at risk of unintended pregnancy were at high risk during those periods of nonuse. Our findings suggest that out of the 28 million nonsterilized U.S. women aged 18–44 who are at risk for unintended pregnancy,<sup>†</sup> some six million are exposed to pregnancy risk without contraceptive protection for at least some period each year, and another 11 million switch methods or have a gap in use around a period of pregnancy or no sexual activity.

## Nonuse and Risky Gaps

Infrequent sexual activity, difficulties in accessing or using methods and ambivalence about avoiding pregnancy were all reasons for nonuse reported by women who had had a gap in contraceptive method use of at least one month in the previous year, even though they were at risk of unintended pregnancy. In addition, more than half of women who had experienced such a gap reported one or more significant life events that coincided with their nonuse. (A similar question was not asked of other women, so we do not know whether such changes are as prevalent among all women.)

The importance of method-related difficulties among women who had experienced a gap in contraceptive use when they were at risk of unintended pregnancy can be found both in the reasons they gave for nonuse and in

\*The comparable subset of NSFG respondents excluded all women aged 15–17; women or their partners who had been contraceptively sterilized or were otherwise infertile; and women who were pregnant, postpartum or seeking pregnancy at the time of the survey.

†Among the NSFG universe of 62 million women aged 15–44 in 2002, 46% (28 million) were aged 18–44 and at risk of unintended pregnancy according to our definition.

their switching patterns. Forty percent of these women reported method-related problems (such as difficulties accessing or paying for methods, or prior side effects and difficulties with method use) as a reason for nonuse. These difficulties, in turn, are likely to have contributed to the low proportion of women with gaps who were current pill users or who had started the year using hormonal or long-acting methods. For example, a smaller proportion of women who had experienced a gap when they were at risk of unintended pregnancy than of women who continuously used a method reported current pill use. Moreover, the same problems that some women have with methods that lead them to stop method use altogether while remaining at risk of pregnancy may also contribute to lower proportions of women adopting the most effective methods when they return to method use. Only 12% of women who had experienced a contraceptive gap when they were at risk of unintended pregnancy switched to a more effective method during the year, compared with 25% of women who had had a gap in method use because of a pregnancy or a period of no sexual activity. These patterns suggest that the same types of difficulties that contribute to stopping method use altogether, especially method-related problems, also contribute to fewer switches to the most effective methods.

In addition to women who had clear-cut periods of unprotected risk of unintended pregnancy, another four in 10 women at risk experienced one or more contraceptive transitions during the year. Although women in this group may have had an elevated risk of unintended pregnancy compared with women who had used the same method or methods the entire year, they successfully made contraceptive transitions without experiencing unprotected gaps of one month or longer. More analysis is needed to assess how well such women use their methods during transitions and what support they receive from providers when switching. Understanding their success may be useful for finding ways to support women who have difficulties with contraceptive transitions.

### **Study Limitations**

Several limitations need to be acknowledged when discussing our findings. First, the data were collected retrospectively from women who were available to be interviewed by telephone; women without telephones and those not likely to be at home are underrepresented. Women in households that could not be screened for eligibility (40% of households sampled) and women who refused to be interviewed (25% of eligible women identified) may be a selective group. Also, some households with potentially eligible respondents may have opted out of the screening by responding that no age-eligible woman was present. These situations may have introduced some error, as poor, young or working women and those most likely to refuse the interview may be underrepresented. Our weighting of the data on the basis of the national distribution of women

by age, marital status, race and ethnicity provides some correction for these possible biases.

Recall bias is a potential problem, as some women may not have accurately remembered the details of their contraceptive use or nonuse for each month of the previous year. Our questions were designed to maximize women's ability to at least recall whether they had experienced a period of nonuse, and all questions related to dates and length of time were echoed to women to assist with recall of past events. (For example, if a woman reported having used a current method for eight months, the interviewer would record the response and repeat, "That would be since about [month/year]. Is that correct?")

Finally, two small groups of women who were not at risk of unintended pregnancy at the time of the survey but who might have been earlier in the year were not interviewed: women who were pregnant or trying to become pregnant at the time of the survey and women who had been sterilized during the past 12 months. Women in these groups may have begun the year at risk. Exclusion of these women could have biased our results if their method use patterns were systematically different from those of other women in the sample; however, such bias would be small, because these groups are small and would have been exposed to pregnancy risk for only part of the year.

### **Implications**

Providers can help reduce unintended pregnancy by counseling women about their risk of pregnancy and helping them find acceptable contraceptive methods appropriate for their needs and pattern of sexual activity. The first challenge for providers in regard to women who have not used a method during the previous year—including those who have sex infrequently—is to ensure that they are aware of their risk of unintended pregnancy. Although women who have sex infrequently may perceive their risk of pregnancy to be low, even one episode of unprotected sex can result in pregnancy. The second challenge is to improve women's ability to access and use a method when one is needed. To these ends, providers should consider asking women who are not currently sexually active or who report infrequent sexual activity if they would like a supply of condoms and a prescription for a hormonal method that could be used later in the year if needed.

Also, providers have a key role to play in reducing women's difficulties using methods. Women who have experienced side effects or problems maintaining method use may need extra counseling and ongoing support to help them manage method-related difficulties, as well as to ensure that they have a choice of methods and the opportunity to find a more acceptable method if their difficulties reduce effective use. Because such difficulties are usually most pronounced when women newly adopt a method or renew use of a method after a gap, all women making a method switch may need special attention and follow-up to ensure a successful switch. Finally, because women often experience gaps in contraceptive use at

the same time as periods of personal change or crisis, providers may want to find ways to identify women who are experiencing such life transitions, to provide them with the extra support and encouragement they need to maintain continuous contraceptive use.

#### REFERENCES

1. Finer LB and Henshaw SK, Disparities in rates of unintended pregnancy in the United States, 1994 and 2001, *Perspectives on Sexual and Reproductive Health*, 2006, 38(2):90-96.
2. Calculated from Mosher WD et al., Use of contraception and use of family planning services in the United States, 1982-2002, *Advance Data from Vital and Health Statistics*, 2004, No. 350, p. 18, Table 6.
3. Unpublished tabulations of the 1982, 1988 and 1995 National Surveys of Family Growth.
4. Gleit D, Measuring contraceptive use patterns among teenage and adult women, *Family Planning Perspectives*, 1999, 31(2):73-80.
5. Grady WR, Billy JOG and Klepinger DH, Contraceptive method switching in the United States, *Perspectives on Sexual and Reproductive Health*, 2002, 34(3):135-145.
6. Trussell J and Vaughan B, Contraceptive failure, method-related discontinuation and resumption of use: results from the 1995 National Survey of Family Growth, *Family Planning Perspectives*, 1999, 31(2):64-72 & 93.
7. Frost JJ, Singh S and Finer LB, Factors associated with women's patterns of contraceptive use, United States, 2004, *Perspectives on Sexual and Reproductive Health*, 2007 (forthcoming).

8. Westfall PH and Wolfinger RD, Multiple tests with discrete distributions, *American Statistician*, 1997, 51(1):3-8.

9. Alan Guttmacher Institute, Contraceptive needs and services, 2001-2004, 2004, <<http://www.guttmacher.org/pubs/win/index.html>>, accessed Jan. 15, 2006.

10. Trussell J, Contraceptive efficacy, in: Hatcher R et al., eds., *Contraceptive Technology*, 18th rev. ed., New York: Ardent Media, 2004, pp. 773-781.

#### Acknowledgments

The authors thank Larry Bye, Victoria Albright, Roxanne Metz, Sarah Barry and numerous programmers and interviewers—all of Field Research Corp.—for their effort in carrying out the survey. For guidance during questionnaire development, the authors thank Stephanie Glezos Bell, Janet Chapin, Vanessa Cullins, Jacqueline E. Darroch, Maryjane Puffer, David Landry, Laura Lindberg, Pablo Rodriguez, Diana Romero, John Santelli, Larry Severy, Scott Spear, James Trussell, Carolyn Westhoff and Susan Wysocki. Finally, they thank Theresa Camelo, Alison Purcell, Junhow Wei and Lori Frohwirth for research assistance. This study was supported by grant HD42426 from the National Institute of Child Health and Human Development, National Institutes of Health. The conclusions expressed here are solely the responsibility of the authors and do not necessarily represent the views of the funder.

**Author contact:** [jfrost@guttmacher.org](mailto:jfrost@guttmacher.org)