Repeat Abortion in the United States

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Executive Summary

Background

Among women having abortions in the United States, about one-half have already had a prior abortion. This indicator—the level of repeat abortion—has attracted attention, sometimes negative: Women having a repeat abortion may be perceived as having difficulty practicing contraception, as lacking motivation to prevent unintended pregnancy, as using abortion as a method of family planning, or as being different from other women in more fundamental ways, such as ability to become pregnant and exposure to risk of pregnancy. In truth, however, little is known about U.S. women who have repeat abortions.

This report provides an overview of the issue, with an emphasis on comparing first-time and repeat abortion patients. In studying this issue, our intent is not to draw negative attention to repeat abortion or women who obtain them. Rather, we hope to generate productive discussions of the issue and help reframe the topic and change the language used to discuss it. The goal of the report is to document what is known about repeat abortion, put it in the context of repeat unintended pregnancy more broadly and provide recommendations for programs and policies that might help women obtaining abortions avoid subsequent unintended pregnancies.

Prior Research

Around the time that *Roe v. Wade* was decided in 1973, levels of repeat abortion increased from approximately 3% of all legal abortions in 1970 to 15% in 1974 to 23% in 1976. In response to this trend, and to the alarm it provoked among some observers, researchers looked at two issues: statistical models predicting patterns in repeat abortion based on population trends, fertility, contraceptive use patterns and abortion rates; and the characteristics and contraceptive use patterns of women obtaining second and higher-order abortions.

The statistical models demonstrated that repeat abortion would occur even among populations with high levels of contraceptive use, due to the fact that pregnancies occur even when contraceptives are used. One study accurately predicted that the proportion of abortions that are repeat abortions would increase sharply the first few years after legalization and then settle into a more steady pattern.

The studies examining the characteristics of women obtaining repeat abortion have not typically been representative of the entire United States, but they have identified several key patterns. In particular, the studies suggest that a woman's age and other aspects of exposure to both the risk of pregnancy and legal, accessible abortion services are important dynamics behind repeat abortion.

Data Used

Throughout this report, we rely on a number of major data sources, including

- annual abortion surveillance reports from the Centers for Disease Control and Prevention (CDC), providing data through 2002 for most, but not all, states;
- the Guttmacher Institute's Abortion Provider Census, a periodic study of all known U.S. abortion providers, most recently collecting data for 1999 and 2000;
- Guttmacher's 2000–2001 Abortion Patient Survey, a nationally representative survey of over 10,000 women obtaining abortions at 100 facilities;
- Guttmacher's 2004 Abortion Reasons and Logistics Survey, a national survey of 1,200 abortion patients at 11 clinics to assess reasons for and potential obstacles to obtaining abortion services; and
- the 2002 National Survey of Family Growth (NSFG), a representative survey conducted by the National Center for Health Statistics entailing in-person interviews with over 7,600 women that included detailed pregnancy histories.

One major difficulty in studying abortion is that many women do not accurately report their abortion

experiences. For example, only about one-half of all abortions were reported in the 2002 NSFG; for that reason, findings from the NSFG that pertain to abortion, including levels of unintended pregnancy, are considered exploratory. For most of our analyses, we were able to overcome, at least in part, these high levels of underreporting by relying on alternate data sources. For example, much of the data used in this report were self-reported by women accessing abortion services and prior abortions are more likely to be reported in this context as compared with phone, mail and in-person surveys.

Key Findings

• *Trends since 1973*. As predicted by demographers, the proportion of women having abortions who were undergoing a repeat procedure increased rapidly following the legalization of abortion, more than doubling between 1974 and 1979 (from 15% to 32%). Levels of repeat abortion increased at a slower pace between 1979 and 1993 (from 32% to 47%) and have remained stable since then.

• *Variation by state*. Although it does not explain all the variation by state in repeat abortion, one pattern is that states with high abortion rates are more likely to have high levels of repeat abortion. Increased access to and use of abortion services, as reflected in higher abortion rates, results in a larger pool of women eligible for second and higher-order abortions.

• *Age*. The strongest characteristic distinguishing first-time and repeat abortion patients is age: Women who are older have had more years of exposure to the risk of having an unintended pregnancy and an abortion. Women obtaining second or higher-order abortions are almost twice as likely as those obtaining first abortions to be aged 30 or older (32% vs. 18%), a pattern that holds up when controlling for other factors through logistic regression.

• *Prior births*. The second important distinguishing characteristic is parity: Women having repeat abortions are more likely than first-time abortion patients to have had prior births (76% vs. 47%), and more likely to have had many (19% vs. 8% have had three or more prior births). Again, this relationship holds up even when controlling for a woman's age and other factors.

• *Other characteristics*. Compared with women obtaining first abortions, those obtaining repeat abortions are more likely to be black (38% vs. 26%) and less likely to have a college degree (17% vs. 29%), but neither association is strong. First-time and repeat abortion patients do not differ by poverty status, although repeat abortion patients are slightly more likely to have Medicaid coverage, another indicator of economic disadvantage.

• *Contraceptive use*. If women use repeat abortion as a method of contraception, those who have had prior abortions should have had lower levels of contraceptive use at the time of pregnancy. This is not the case: Regardless of whether they were obtaining a first or repeat abortion, just over one-half of women had been using contraceptives when they became pregnant, and this lack of an association holds up after controlling for other factors. Adolescent women obtaining repeat abortion are, in fact, slightly more likely than first-time abortion patients to have become pregnant while using a hormonal method.

• *Risk factors*. In an exploratory analysis, we found no associations between repeat abortion and risk factors such as experiences with coercive sex, poor health, prior problem pregnancies or substance abuse. However, the data used to examine these associations were incomplete and subsequent research using more accurate data might yield different results.

• *Timing*. Another exploratory analysis found that repeat abortions may occur within several years of each other, possibly indicating situational problems for some women in avoiding unintended pregnancy. Three-quarters of repeat abortions were reported to have occurred within five years of the prior procedure, including four in 10 within two years. Third and higher-order abortions appear to be even more closely spaced.

• *Unintended pregnancies and births*. It is possible, if not likely, that women who have had a prior abortion have also had other unintended pregnancies, some of which they carried to term. Unintended births are common in the United States: Among women aged 15–44, 31% report having had one or more unintended births; 11% have had two or more. Women at risk for repeat abortion share many of the same characteristics, including age, prior births and race, of women at risk for repeat unintended births.

Implications

Repeat abortion is an indicator of the larger problem of unintended pregnancy. Our results suggest that some groups of women have multiple unintended pregnancies, some resulting in births, some in abortion, and that women rely on repeat abortion when they find themselves unable to care for a child, or another child, or have already met their childbearing goals. Thus, efforts to reduce unintended pregnancy will, by default, reduce repeat abortion. Yet, women obtaining abortions may present an important opportunity to provide detailed, tailored information and access to services that will help them avoid subsequent unintended pregnancies.

Little is known currently about the extent to which abortion providers are able to or already offer contraceptive counseling, referrals or services. Subsequent research should assess the level and types of contraceptive services offered by abortion providers so that effective strategies can be developed to expand and improve them.

Several strategies seem worth exploring. Providers of abortion services might prioritize the integration of newer, longer-acting contraceptive methods that present less room for user error, such as the patch (changed weekly), the vaginal ring (changed monthly), injectables (provided every three months), the implant (effective for three years), and recent models of the IUD (effective for at least five years). In addition, all women obtaining abortions could be provided with supplies of emergency contraception prior to leaving the clinic. Information and education about emergency contraception alone are not enough, as women are likely to face obstacles when they try to obtain it; if women leave the clinic with the actual pills, however, they will be more likely to use them. New funding sources may be necessary to implement either of these strategies.

Even with substantial improvements in their contraceptive services, abortion providers can only accomplish so much. Contraceptive use is an ongoing process, and opportunities for contraceptive counseling by abortion providers is often limited to one or two visits. Structural barriers for clinics, such as understaffing, are also problematic. In particular, the federal government's attempt to keep providers of abortion services from participating in the Title X national family planning program has been counterproductive: Women having an abortion are almost universally in need of contraceptive services to prevent another unintended pregnancy, and this policy interferes with the coordination necessary to facilitate their access to contraceptive care.

Moreover, women themselves face serious challenges in using contraceptives and avoiding subsequent unintended pregnancy. Most women obtaining abortions—whether for the first or third time—are poor or low-income, and they may have difficulties securing necessities such as housing, food, jobs and child care; contraception is likely to fall low on the list of priorities. In addition, some women face obstacles such as abusive partners, physical and mental health problems, or substance abuse. Future research will need to examine the extent to which these types of factors result in repeat abortions in order to gain a realistic idea of the reduction in repeat abortion that can be achieved through improvements in contraceptive services.

Chapter 1

Introduction

Among U.S. women having abortions in 2002, about one-half had already had a prior abortion.[1] Given a rate of 21 abortions per 1,000 women aged 15–44,[2] one out of every 100 women in this age-group obtained a second or higher-order abortion. These statistics attract attention—sometimes negative attention[3]—and stimulate discussion about the meanings and implications of repeat abortion, and what policies and programs might best help reduce levels of unintended pregnancy. Yet, the information available about repeat abortion—that is, having a second or higher-order abortion—is limited.

Women who have a repeat abortion are often perceived as being different from women having their first abortion: Some consider the first group to have greater difficulties using contraceptives effectively,[4] while others perceive them to lack motivation to prevent unintended pregnancies. But these assumptions may not be accurate. For example, repeat abortion is sometimes viewed as an indication that women rely on abortion as a method of family planning;[5] yet several studies have found that women who obtained repeat abortions were more likely to have been using contraceptive methods when they became pregnant than women who were having their first abortion.[6]

Moreover, women who have repeat abortions are likely to be selectively different for some reasons that are so fundamental they go unnoticed. First, the probability of becoming pregnant is itself linked to biological factors that are often beyond an individual's control. For example, it has been estimated that the average woman would have more than 30 abortions in her lifetime if she were sexually active throughout her reproductive years, did not want to have any children and did not use contraceptives.[7] But some women are infertile and others have reduced levels of fertility. From a biological perspective, women who have had one abortion are already selectively more fecund than women who have not, and, in turn, are at greater risk of having a second pregnancy. In addition, age is one of the most important determinants of repeat abortion, and, among women having abortions, the older a woman is the more likely she is to have terminated a prior pregnancy. This is due to the fact that older women have spent more years at risk of pregnancy.

When confronted with an unintended pregnancy, women overall are slightly more likely to carry the pregnancy to term than to have an abortion.[8] The analysis in this report reveals that, among women terminating their pregnancies, the more children a woman has, the more likely she is to be obtaining a repeat abortion. Thus, when examining patterns of repeat abortion, it is important to also consider patterns and levels of multiple unintended births, as these two outcomes may be interrelated.

Behavioral factors, such as the frequency and timing of sexual intercourse and contraceptive use, also play a role in repeat abortion.[9] Although behavioral factors are to some extent under individual control, circumstances can intervene and reduce an individual's ability to prevent an unintended pregnancy. These include intimate partner violence (including sexual violence and coercion), partners' conflicting preferences regarding pregnancy, inadequate access to effective contraceptives and inaccurate knowledge about the risk of pregnancy during the menstrual cycle.

Abortion is an essential part of reproductive health for many women, and women who utilize abortion services more than once should not be viewed negatively. As no woman gets pregnant for the purpose of having an abortion, the current level of repeat abortion is one indicator that a large number of U.S. women have multiple unintended pregnancies. In studying this issue, our intent is not to draw negative attention to repeat abortion or women who obtain them. Rather, we hope to generate productive discussions of the issue and help reframe the topic and change the language used to discuss it.

This report presents an overview of what is known about repeat abortion, drawing on both published literature and statistics, and on new analyses of data avail-

able from multiple national surveys. We identify several potential strategies to help women avoid unintended pregnancies in general, and in the case of women who have had repeat abortions, to assist them in meeting their reproductive goals and preventing subsequent unintended pregnancies. This report also identifies important knowledge gaps.

Chapter 2 provides a brief review of key U.S. and Canadian research articles about repeat abortion, including some of the earliest U.S. studies. (See Appendix A for an annotated bibliography of key domestic and international studies of repeat abortion.) Chapter 3 describes the main data sources analyzed for this report—state-level vital statistics, a 2000 census of abortion providers, a 2000–2001 national sample survey of abortion patients and the 2002 National Survey of Family Growth (NSFG). It also discusses data quality and the shortcomings of each data source, an important topic given the difficulty of obtaining accurate reporting on abortion.

Chapter 4 reports the key findings from our analyses of the national data sources mentioned above. We first show trends in repeat abortion in the United States, as well as variations across states. We compare the sociodemographic profiles of women obtaining first abortion with those obtaining higher-order abortions, and identify subpopulations in which the majority of women terminating their pregnancies have had a prior abortion. We use multivariate analyses to determine the relative importance of characteristics such as age, race/ethnicity and prior births in predicting whether women obtaining abortions have done so in the past. We test for associations between repeat abortion and factors such as experience with coercive sex and illicit drug use, and we examine the time duration between abortions. Chapter 4 also compares the contraceptive use patterns of women obtaining first and higher-order abortions to determine the extent to which having had a first abortion is associated with an increased likelihood of using contraceptives. This information will help us to identify appropriate programs and services by showing which groups of women have a higher-than-average probability of repeat abortion, and will also point to potential areas for future research.

Many women carry unintended pregnancies to term, and some do so more than once. In Chapter 5, we use data from the 2002 NSFG to explore patterns in lifetime incidence of unintended pregnancy, including repeat unintended birth, to evaluate the overlap between these populations and women who obtain more than one abortion. The final chapter summarizes the key findings from the report and identifies several potential strategies for improving policies and programs to help women obtaining abortions avoid subsequent unintended pregnancies.

Chapter 2

What Do We Already Know About Repeat Abortion?

Around the time that *Roe v. Wade* was decided in 1973, levels of repeat abortion increased from approximately 3% of all legal abortions in 1970 to 15% in 1974 and 23% in 1976.[10]* In response to the seemingly rapid increase in repeat abortion, some concern was expressed that women were using abortion as their primary method of family planning.[11] The belief that government funding encouraged women to rely on abortion in place of contraception was one impetus behind the 1977 Hyde Amendment, which largely withdrew federal Medicaid funds for abortion services (except for pregnancies that were a result of rape or incest or presented a threat to the woman's life).[12] In response to these types of developments, several studies of repeat abortion were conducted, typically focusing on one of two issues: characteristics and contraceptive use patterns of women obtaining second and higher-order abortions and statistical models predicting patterns in repeat abortion on the basis of population trends, fertility, contraceptive use patterns and abortion rates. Studies of the latter type have not been updated since the 1970s, but they provide an interesting perspective for examining the issue.

Researchers have estimated that if a woman was continuously sexually active, did not use contraceptives and did not want any children, she would need to have more than 30 abortions in her lifetime.[13] Of course, the assumptions embedded in this model do not apply to most U.S. women: Few are continuously sexually active between the ages of 15 and 44, and most women want, and have, two or more children. Still, from this perspective, it is obvious that women rely on contraceptive methods to prevent pregnancy; otherwise, levels of repeat abortion would be far higher.

Christopher Tietze was one of the first researchers to examine repeat abortion, and his work demonstrated that repeat abortions would occur even among populations with high levels of contraceptive use. For example, assuming a 30% monthly probability of conception when no contraception is used,† he estimated that 3% of all women who had abortions would experience a subsequent pregnancy within 12 months if they relied on contraceptive methods such as the pill and exhibited typical levels of contraceptive failure (Table 2.1 shows perfect- and typical-use failure rates by method among all women);[14],‡ 16% would experience a subsequent pregnancy within five years.[15] If the same women were to use a method that was "only" 90% effective—for example, if they were inconsistent condom users—24% would become pregnant within one year, and 82% would become pregnant within five years. In turn, assuming a constant abortion rate, after the first year of abortion legalization, he estimated that 1–8% of abortions would have occurred among women who had had a prior abortion (depending on the level of effectiveness of the contraceptive methods used), and that 25–75% would have been repeat procedures after 10 years. Tietze acknowledged that his models were imperfect, and, for example, did not take into account that some women who had abortions were subsequently sterilized or experienced reduced levels of sexual activity, while others carried subsequent unintended pregnancies to term (see also Potter and Ford, 1976, listed in the annotated bibliography). Thirty years after *Roe v. Wade,* the proportion of abortions that were repeat procedures (45–48%, depending on the data source) was in the middle of Tietze's predicted range for 1983, suggesting that most women accessing abortion services are using contraception rather consistently.

*These proportions are based on the 13 areas (12 states and New York City) that permitted access to legal abortion for at least some women prior to 1973. It was assumed that women were reporting prior legal abortions, and that illegal abortions were excluded; the true proportion of repeat procedures was likely higher.

†This probability assumes the woman is fecund and sexually active.

‡While the pill has a failure rate of less than 1% when used perfectly, the user-failure rate, which takes into account that some women are unable to take their pill every day and subsequently become pregnant, was, at that time, estimated to be between 4% and 7%. Tietze's analyses relied on the user-failure rate. Table 2.1 provides (recent) perfect-use and typical-use failure rates for a variety of contraceptive methods.

Tietze and Jain used these same assumptions to forecast patterns in repeat abortion.[16] They predicted that, if the abortion rate remained constant, the proportion of abortions accounted for by women with prior abortions would increase sharply the first few years after legalization and then settle into a steady increase for approximately 25 years, when the first cohort of women who had access to legal abortion would "age out" of their reproductive years. As we discuss in Chapter 4, this is largely the trend that occurred.

Levels of repeat abortion in the United States have been lower than those in countries such as Hungary,[17] where abortion was legal but restricted between 1973 and 1988.[18] And even in Denmark and Sweden, where contraceptive services were accessible and methods were widely used, levels of repeat abortion in 1987 were not substantially lower than in the United States: 38% and 35% compared with 42%, respectively.[19] More recently, in 2002, 39% of abortions in Sweden were repeat procedures,[20] compared with 47–48% in the United States.*

A number of studies have examined the characteristics of women obtaining repeat abortions, typically comparing them to first-time abortion patients, with the expectation that the information could be used to direct information and services to women in order to help them avoid subsequent unintended pregnancies. The U.S and Canadian studies that have examined the characteristics of women obtaining repeat abortions are typically based on nonrepresentative samples. None- theless, several patterns are likely to apply to the larger population of U.S. women who have terminated more than one pregnancy: Compared with women obtaining their first abortion (a substantial proportion of whom will go on to obtain one or more subsequent abortions), those who had a prior abortion are generally older, as they have had more years of exposure to risk of pregnancy.[21] Women obtaining repeat abortions are more likely to have ever been married,[22] and there is evidence that cohabiting women are overrepresented.[23] Women having second or higher-order abortions are more likely to report an increased frequency of sexual activity,[24] thereby increasing their overall risk of pregnancy. Women with children are more likely to be obtaining second or higher-order abortions than are those with no prior births,[25] as are women of color compared are white women.[26] Associations between income and repeat abortion are inconclusive. One study found repeat abortion to be more common among women with lower socioeconomic status,[27] while another found it to be more common among middle- or higher-class women;[28] a third found no association.[29]

Interestingly, several studies suggested that, within the population of women who had terminated at least one pregnancy, those with prior abortions were more likely to have been using a contraceptive method when they conceived, compared with those who had had no prior abortions.[30] Moreover, three studies found that the use of oral contraceptives was more common among repeat abortion patients than women obtaining their first abortion,[31] though another study found no significant difference between the proportion of first and repeat abortion patients using the most effective methods (pill, IUD or sterilization) at the time of pregnancy.[32] A study analyzing patterns of contraceptive use and prior abortions among patients seeking abortion in Minnesota suggested that contraceptive use improved after a first termination for many women: Contraceptive nonusers become users and users of less effective contraceptive methods adopt more effective ones.[33] These dynamics may contribute to relatively better contraceptive use among women with prior abortions, compared with first-time abortion patients.

Studies of repeat abortion among Canadian women suggest several other characteristics that may be associated with repeat abortion, though they have yet to be confirmed in subsequent studies. These characteristics include a history of physical abuse, abuse by current male partners and prior sexually transmitted disease (STD) diagnosis.[34] Nationally, the proportion of Canadian women who terminated their pregnancies in the first trimester was slightly higher for repeat abortion patients than for patients obtaining their first abortion,[35] perhaps because repeat patients were better able to recognize their pregnancies and already knew where to go for abortion services.

And, finally, two U.S. studies, both dated, have examined the timing of repeat abortions in an attempt to understand how first and higher-order abortions fit into women's reproductive life spans. Panel data from Hawaiian women obtaining abortions in the 1970s found that 30% of the women had a second pregnancy within 1–5 years of their first termination.[36] Many of these pregnancies came shortly after the abortion: Thirteen percent of women who had an abortion between 1970 and 1976 became pregnant again within a year, and 21% became pregnant within two years. Slightly

*The lower figure, 47%, is based on abortion surveillance reports compiled by the Centers for Disease Control and Prevention and adjusted by the Guttmacher Institute, and the 48% comes from Guttmacher's 2000–2001 Abortion Patient Survey. The reasons for these slight discrepancies between data sources are discussed in the next chapter.

less than one-half of subsequent pregnancies within five years of the abortion (46%) were terminated (compared with 22% nationally[37]), though the closer the subsequent pregnancy was to the first termination, the more likely it was to result in a repeat termination.

Tietze found that, among repeat abortion patients in 1978, the average time span between procedures was 27 months.[38] This was an increase from the 20-month time lapse between abortions observed in 1974. In part, the seven-month increase in time between repeat abortions (between 1974 and 1978) was due to the longer availability of legal abortion services; some of the women eligible or at risk for a repeat abortion in 1974 did not obtain them until 1975 or later. More recent studies have not examined time between abortions, and it is likely that the time span between abortions has continued to increase. Women born in 1958 or later have had legal access to abortion for their entire reproductive lives. Some women who have terminated more than one pregnancy may have obtained their first abortion during their teenage years in order to delay childbearing, and had subsequent abortions in later adulthood, after having achieved their childbearing goals.

In summary, the above studies suggest that exposure—both to the risk of pregnancy and to legal, accessible abortion services—is an important dynamic behind repeat abortion. Some level of repeat abortion is unavoidable because fecund, sexually active women—even those who use effective methods of contraception—will experience multiple unintended pregnancies and choose not to carry them to term. Yet it is possible that, among the population of women obtaining abortions, there are groups of women in need of specialized or tailored information and services to help them avoid subsequent unintended pregnancies. Updated information is needed to determine which subpopulations, if any, could potentially benefit from these services.

TABLE 2.1 First-year contraceptive failure rates

Method	Perfect use*	Typical use
Pill (combined)	0.3	8.0
Tubal sterilization	0.5	0.5
Male condom	2.0	15.0
Vasectomy	0.1	0.2
3-month injectable	0.3	3.0
Withdrawal	4.0	27.0
IUD Copper-T	0.6	0.8
IUD Mirena	0.1	0.1
Periodic abstinence		
Calendar	9.0	25.0
Ovulation method	3.0	25.0
Symptothermal	2.0	25.0
Post-ovulation	1.0	25.0
1-month injectable	0.1	3.0
Implant	0.1	0.1
Patch	0.3	8.0
Diaphragm	6.0	16.0
Sponge		
Women who have had a child	20.0	32.0
Women who have never had a child	9.0	16.0
Cervical cap		
Women who have had a child	26.0	32.0
Women who have never had a child	9.0	16.0
Female condom	5.0	21.0
Spermicides	18.0	29.0
No method	85.0	85.0

*Most perfect-use rates have been clinically evaluated, but some are based on clinical expertise or "best guesses" (such as some forms of periodic abstinence, withdrawal and no method use).

Sources: **Perfect use**—Hatcher RA et al., eds., *Contraceptive Technology* , 18th rev. ed., New York: Ardent Media, 2004, Table 9-2. **Typical use**—Ibid.; and Fu H et al., Contraceptive failure rates: new estimates from the 1995 National Survey of Family Growth, *Family Planning Perspectives* , 1999, 31(2):56–63.

Chapter 3

Data Issues and Sources

General Shortcomings of Abortion Data

It is difficult to study abortion using social science survey data, as many women do not reveal their abortion experiences. For example, the 1995 National Survey of Family Growth, a nationally representative survey of U.S. women aged 15–44, asked about respondents' abortions during a face-to-face interview and also in a self-administered, computer-assisted survey in an attempt to improve abortion reporting. The proportion of abortions reported during face-to-face interviews was 45%; even in the more confidential computer-assisted component, only about 60% of abortions were reported.[39] For most of our analyses, we were able to overcome these high levels of underreporting by relying on alternate data sources, which we describe below. Nonetheless, we acknowledge that some level of underreporting is almost certainly present.

Data Sources

Annual Abortion Surveillance Reports from the Centers for Disease Control and Prevention

For most years since 1969, the Centers for Disease Control and Prevention (CDC) has annually compiled abortion incidence data reported by state Departments of Health.* These data come from forms filled out by abortion providers and submitted to state health departments. Some states do not have mandatory reporting, and in some instances, only 50–60% of abortions are reported.[40] Due to incomplete reporting, the CDC's figures for the incidence, or number, of abortions are consistently lower than those reported by the Guttmacher Institute's Abortion Provider Census (see below). Many state abortion reports include the number of previous abortions women have had. While the CDC information on the *proportions* of abortions that were repeat procedures are largely comparable to those obtained by Guttmacher Abortion Patient Surveys (see below), they require some adjustments due to incomplete and inconsistent reporting. For example, to adjust the CDC figures on repeat abortion based on the 2002 surveillance reports, information from four states was excluded because more than 10% of the cases in those states were missing information on the number of prior abortions or reporting on this characteristic was known to be incomplete for some other reason. For all years, the adjustments result in a slightly lower proportion of first abortions (typically one to two percentage points) and a slight increase in second and higher-order abortions.

Guttmacher Abortion Provider Census

Since 1973, the Guttmacher Institute has collected information on the number of abortions performed in the United States by conducting a periodic census of all known abortion providers. The most recent survey was in 2001 and collected data for 1999 and 2000;[41] estimates of the number of abortions that occurred in 2001 and 2002 have been projected using information from the CDC annual abortion surveillance reports for those years.[42] The Guttmacher Abortion Provider Census does not collect information about repeat abortions, but its count of the total number of abortions is combined with CDC-based estimates of the proportion of abortions that are repeat abortions to produce estimates of the number of repeat abortions. These data also provide the most accurate source for information on U.S. abortion rates, which we also use in the analysis carried out for this report.

Guttmacher's 2000–2001 Abortion Patient Survey

Much of the analysis for this report relies on information from the Guttmacher Institute's Abortion Patient Survey (APS). In 2000–2001, Guttmacher conducted a nationally representative survey of over 10,000 U.S.

*During 1973-1997, data were received from or estimated for 52 reporting areas in the United States: 50 states, the District of Columbia and New York City. In 1998 and 1999, CDC compiled abortion data from only 48 reporting areas. Alaska, California, New Hampshire and Oklahoma did not report, and data for these states were not estimated. For 2000-2002, Oklahoma again reported these data, increasing the number of reporting areas to 49.

women obtaining abortions at 100 facilities. The facilities were selected from all hospitals, clinics and physicians' offices where, according to information from Guttmacher's 1996 Abortion Provider Census, more than 30 abortions were performed in 1996. Facilities distributed surveys to all women who had an abortion during a specified period. The four-page, self-administered questionnaire was available in both English and Spanish and included questions about patients' demographic characteristics and contraceptive use. The response rate was 82%. The data were weighted to represent all women obtaining abortions during 2000, and all results presented in this report are based on weighted data.

Information on prior abortions is more accurate when gathered from women accessing abortion services than from phone surveys or those administered at home during face-to-face interviews.[43] However, two earlier studies linking medical records and self-reports among abortion patients found that some women terminating their pregnancies fail to report a prior abortion. A 1979 study of nearly 19,000 women obtaining abortions at hospitals in the state of Hawaii found that among women obtaining second or higher-order abortions, 20% did not report prior abortions obtained at the hospital.[44] A 1996 study of 104 women aged 27–30 who were enrolled in a lifelong, longitudinal health care study found that 9% failed to report a prior abortion, and an additional 9% did not report all of the abortions they had obtained.[45] It is therefore likely that some underreporting of prior abortions also occurred in the 2000–2001 APS.

Guttmacher's 2004 Abortion Reasons and Logistics Survey

In 2004, the Guttmacher Institute conducted a study to assess women's reasons for obtaining abortions and potential obstacles to obtaining abortion services.[46] An eight-page, self-administered questionnaire was completed by 1,209 abortion patients at 11 large abortion providers that were selected to represent the principal categories of providers and all four major geographic regions. The response rate was 58%. The study design was not intended to produce a nationally representative sample and the data are unweighted.

2002 National Survey of Family Growth

The National Survey of Family Growth (NSFG) was conducted by the National Center for Health Statistics in 1973, 1976, 1988, 1995 and, most recently, in 2002. The main purpose of this survey is to provide reliable national data on marriage, divorce, contraception, infertility, and the health of women and infants in the United States. The sample represents the noninstitutionalized population of the United States. Between March 2002 and February 2003, in-person interviews were conducted with 7,643 women (and 4,928 men) aged 15–44. Most of the survey questionnaire was administered via face-to-face interviews, including detailed pregnancy histories with information about dates of conception, intention status of each pregnancy, pregnancy outcome (birth, abortion or pregnancy loss) and date of outcome. Afterwards, respondents were also asked to answer a computer-assisted, self-administered survey (ACASI), which contained items on sensitive topics such as prior abortions, experiences with involuntary intercourse and use of illicit drugs. The self-administered questionnaire allowed for greater privacy, and more women reported (more) lifetime abortions on this component than during the face-to-face interview.[47] When possible, we emphasize findings from the self-administered component, as this information is likely to be more accurate.*

For purposes of this project, data from the 2002 NSFG that pertain to abortion, including levels of unintended pregnancy, are considered exploratory as only about one-half of abortions are reported.[48] We use the NSFG despite this shortcoming because it allows us to examine characteristics not included in the 2000–2001 APS, including time between abortions and associations between repeat abortion and selected risk indicators. However, results should be interpreted with caution.

Comparability Among Data Sets

CDC Abortion Surveillance Reports vs. APS

Despite the different data collection techniques, estimates of repeat abortions are comparable between the CDC Abortion Surveillance Report and the APS. In 2000–2001, the APS found that 52% of abortion patients were obtaining their first abortions, 29% their second and 19% third or higher-order abortion. Comparable figures for the CDC abortion reports were 55%, 26% and 19%, respectively, indicating a high level of agreement between the two data sources. Though not used in these analyses, the Guttmacher survey of abortion patients conducted in 1994 also obtained comparable levels of repeat abortion as the CDC.

*While self-administered surveys improve abortion reporting, prior research using the 1995 NSFG suggests that 40% of abortions are still not reported using this format (source: see reference 39).

2000–2001 APS vs. 2002 NSFG

Table 3.1 presents data comparing population characteristics from the 2000-2001 APS, the 2002 NSFG for the period 1997–2001 and the 2004 Reasons and Logistics Survey. Among the abortions reported in the 2002 NSFG, repeat abortions are only slightly underreported; they accounted for 41% of abortions reported to have occurred between 1997 and 2001 (compared with 48% in the 2000–2001 APS). When compared with repeat abortion patients in the APS, women aged 25–29 and Hispanic may be underrepresented in the NSFG, likely due to the higher levels of abortion underreporting found among these groups.[49] Women aged 25–29 at the time of the abortion accounted for 19% of the NSFG repeat abortion patients but 28% of abortion patients in the 2000–2001 APS; Hispanic women accounted for 11% of repeat abortions in the NSFG and 20% in the APS. Abortions to non-Hispanic white women are overrepresented in the NSFG compared with the APS (49% vs. 36%).

2000–2001 APS vs. 2004 Reasons and Logistics

While the survey design for the Reasons and Logistics study was not intended to obtain a nationally representative sample of abortion patients, the characteristics of the sample were similar to those of the larger population of women obtaining abortions (Table 3.1). Forty-nine percent of women reported that they were obtaining a second or higher-order abortion. Among those who reported having had repeat abortions, 59% had obtained second abortions, 26% third abortions and 14% fourth or higher-order abortions, compared with 60%, 25% and 15%, respectively, in the 2000–2001 APS. Compared with women in the APS, a slightly higher proportion of repeat abortion patients in the Reasons survey did not have children (25% vs. 31%).

TABLE 3.1 Percentage distribution of women who have had abortions, by social and demographic characteristics, according to the number of prior abortions, 2000–2001 APS, 1997–2001 NSFG and 2004 Reasons and Logistics

	2000–2001 APS (weighted)			NSFG (weighted) abortions 1997–2001†			2004 Reasons and Logistics (unweighted)		
Characterisitc	Total (N=10683)	1 (N=5548)	2+ (N=5135)	Total (N=457)	1 (N=268)	2+ (N=189)	Total (N=1110)	1 (N=566)	2+ (N=544)
%	100.0	51.8	48.2	100.0	59.0	41.0	100.0	51.0	49.0
Number of abortions									
1	51.8	na	na	59.0	na	na	55.5‡	na	na
2	29.0	na	60.2	24.6	na	60.1	26.4	na	59.3
3	11.8	na	24.6	9.5	na	23.1	11.8	na	26.4
4+	7.3	na	15.2	6.9	na	16.9	6.4	na	14.3
Age									
<20	19.1	29.4	8.1	24.1	32.9	11.6	20.2	29.4	10.2
20–24	33.0	34.5	31.5	32.4	35.0	28.5	35.3	37.6	32.8
25–29	23.1	18.4	28.2	16.5	14.8	19.0	21.1	16.8	25.8
30–34	13.5	9.8	17.6	15.4	12.0	20.3	14.5	9.7	19.7
35+	11.2	7.9	14.7	11.6	5.3	20.6	8.9	6.5	11.5
Number of prior births									
0	39.1	52.7	24.5	na	na	na	43.2	54.4	31.0
1	27.4	23.6	31.4	na	na	na	26.2	23.6	29.1
2	20.3	15.5	25.5	na	na	na	17.4	13.4	21.6
3+	13.2	8.1	18.6	na	na	na	13.2	8.5	18.3
Race/ethnicity									
White non-Hispanic	40.9	45.5	35.9	49.7	49.9	49.3	46.3	52.6	39.6
Black non-Hispanic	31.7	26.2	37.7	28.6	26.1	32.3	31.1	26.6	35.9
Other non-Hispanic	7.3	8.0	6.5	9.4	10.9	7.1	4.6	5.0	4.1
Hispanic	20.1	20.3	19.8	12.3	13.1	11.3	18.0	15.9	20.3
Education§									
Less than high school	12.2	10.5	13.3	18.5	20.0	17.0	7.8	5.2	9.4
High school degree	28.2	25.1	30.2	30.1	20.0	39.6	25.2	25.6	25.0
Some college/associates	38.0	35.7	39.4	25.9	25.8	25.9	36.4	30.2	40.2
College degree	21.6	28.7	17.0	25.6	34.1	17.5	30.6	39.0	25.4
Union status									
Married	17.0	15.3	18.9	19.2	18.8	19.8	14.3	12.8	15.9
Cohabiting	25.4	22.0	29.2	21.7	21.5	22.0	16.6	14.4	18.9
spe/div/wid	10.9	9.9	11.9	11.9	6.9	19.2	11.9	10.3	13.5
Never married	46.6	52.7	40.0	47.2	52.8	39.1	57.2	62.5	51.6
Poverty level									
<100%	26.6	25.8	27.4	24.7	26.6	21.8	30.2	26.6	33.9
100–199%	30.8	30.4	31.2	25.4	22.0	30.4	29.8	30.9	28.7
200% or more	42.6	43.8	41.4	49.9	51.4	47.8	40.0	42.6	37.4
Medicaid coverage									
Yes	24.2	22.5	26.1	13.7	13.1	14.7	na	na	na
No	75.8	77.5	73.9	86.3	86.9	85.3	na	na	na

†Abortions occurred among 366 women; 142 women reported multiple abortions during the five-year time period. ‡Differs from total because (an additional) 90 women who indicated prior abortions did not indicate how many. §Includes women aged 25 or older.

Chapter 4

New Information on Repeat Abortion

While prior research suggests several differences between women obtaining first and repeat abortions, national data are needed to confirm these patterns. And there are many unanswered questions about repeat abortion in the United States: For example, are poverty and economic disadvantage associated with repeat abortion? Are women obtaining second and higher-order abortions more likely than first-time abortion patients to have become pregnant while using hormonal contraceptives? How do patterns in repeat abortion vary by state, and what are some potential reasons for these variations? In this chapter, we use national data to answer these and other questions, and we compare the demographic and contraceptive-use profiles of women who have had first-time and repeat abortions.

Patterns in Repeat Abortion

Trends since 1973

The trend in repeat abortion has largely followed the pattern predicted by Tietze and Jain shortly after abortion was legalized (Chart 4.1).[50] The adjusted CDC data show that the proportion of women having abortions who were undergoing a repeat procedure increased rapidly in the first years following *Roe v. Wade,* more than doubling between 1974 and 1979 (from 15% to 32%). This pattern in repeat abortion mirrors the rapid increase in the (legal) abortion rate that occurred after 1973. The level of repeat abortion increased at a slower pace between 1979 and 1993 (from 32% to 47%), and has remained almost constant thereafter.

Repeat abortion by state

Information on repeat abortion is not available for eight states or for the District of Columbia, and states that account for a disproportionate share of all abortions, such as Florida and California, are among those that do not collect this information. Nonetheless, there is substantial variation in levels of repeat abortion among those states for which information is available, and these patterns may provide insights into dynamics affecting repeat abortion (Table 4.1). Levels of repeat abortion are lowest in the Dakotas, Idaho, Nebraska and Wyoming, where these procedures accounted for 9–31% of all abortions, and highest in Michigan, Ohio,* New York, Maryland and Tennessee where, usually, one-half of abortions (48–52%) are repeat procedures. Maryland is a notable outlier, with 72% of abortions reported to be repeat procedures in 2002. According to the CDC data, the proportion of abortions accounted for by black women is substantially higher in Maryland than in other states—60% compared to 32% nationally[51]—and, as we report below, black women having abortions are more likely to have had a prior abortion.†

States with high abortion rates, on average, have higher levels of repeat abortions; indeed, the two have a correlation coefficient of .54 ($p<.001$), indicating that they are moderately interrelated. Increased access to and use of abortion services, as reflected in higher abortion rates, results in a larger pool of women eligible for second and higher-order abortions.

Characteristics of Repeat Abortion

How do women having (any) abortions differ from all women?

Given current abortion rates, it is estimated that 35% of women will have an abortion by age 45.[52] At the same time, in any given year, the population of women having abortions is a small subset of the larger population

*For 13% of the abortions in Ohio in 2002, it was unknown if the abortion was a first or higher-order procedure. If all the missing abortions were first abortions (an unlikely scenario), than the level of repeat abortion in this state would be 43%, slightly lower than the national average.

†Maryland allows for voluntary reporting of abortions, and based on information from other sources, fewer than 40% of procedures are actually reported to the state health department. The true proportion of abortions accounted for by black women and the proportion of all abortions that were repeat procedures may be lower. Several other states with higher- and lower-than-average levels of repeat abortion also have substantial underreporting of abortions on the CDC surveillance system: Approximately 41% abortions are reported by providers in Idaho and 58% in Michigan.

of women of reproductive age. For example, in 2000, there were 21 abortions for every 1,000 women aged 15–44, meaning about 2% of women of reproductive age had an abortion in that year.[53] To better understand repeat abortion, we examine the characteristics of all women aged 15–44 to see how they compare to the population of women having abortions, according to the Guttmacher Institute's Abortion Patient Survey (APS).

Several groups of women are overrepresented among abortion patients, including those who are younger, black or Hispanic, low-income and unmarried and those who have children (Table 4.2). Specifically, more than half of abortion patients were in their 20s (56%), compared with 31% of all women aged 15–44.* Despite their younger average age, a slightly higher proportion of women having abortions had children (61%, compared with 58% among all 15–44-year olds). Relative to the population of women, a lower proportion of women having abortions are non-Hispanic white (41%), and non-Hispanic black women are overrepresented among women obtaining abortions (32%, compared with 14% of all women), as, to a lesser extent, are Hispanic (20% vs. 15%, respectively). Women having abortions are considerably more likely to be economically disadvantaged than are all women; the majority of abortion patients in 2000 (57%) were poor (had incomes less than 100% of the federal poverty level) or low income (100–199% of poverty), compared with 40% of all women. Medicaid is another indicator of economic disadvantage, and women obtaining abortions were more than two times as likely as all women to have had Medicaid coverage for general health care (24% vs. 10%, respectively). A smaller proportion of women having abortions were married compared with all women (17% vs. 46%), and the proportion who were cohabiting was almost three times as high as for all women (25% vs. 9%).

Among the general population of women aged 15–44, 89% were using some method of contraception, and this proportion was substantially lower for women having abortions (54%). Not surprisingly, then, method use profiles differed between the two groups: Thirty-four percent of all women were using a long-acting or permanent method, compared with fewer than 1% of abortion patients. Women using the pill, patch or injectable accounted for 33% of all women at risk of pregnancy, but only 14% of abortion patients. Despite the substantially higher level of contraceptive nonuse among abortion patients, women using a barrier method were overrepresented among women having abortions: 29% compared with 17%.

In sum, compared with the larger population of women, those having abortions are more likely to be in situations or circumstances that make it more difficult to support a child insofar as they are more likely to be economically disadvantaged and currently without a partner. Additionally, the 11% of all sexually active women who were not using contraceptives accounted for almost one-half of abortions. Long-acting method users are very unlikely to be represented among women having abortions due to the high effectiveness levels of these methods and their lack of opportunity for user error. That women who rely on barrier methods are overrepresented among abortion patients may be due to two circumstances: First, relative to long-acting methods and hormonal contraceptives, barrier methods have higher failure rates even when used perfectly (see Table 2.1). Additionally, women and their partners may have had problems using barrier methods consistently and correctly every time they had sex.

How do women obtaining repeat abortions differ from first time abortion patients?

According to the APS, 48% of women in 2000–2001 were obtaining repeat abortions, including 29% who were seeking their second abortion, 12% seeking their third abortion and 7% seeking their fourth or higher-order abortion (not shown). For purposes of this section, we focus on comparisons between first-time abortion patients and those obtaining second and higher-order procedures (Table 4.2, columns 3 and 4; for more detailed breakdowns on number of abortions, see Appendix Table B1). Age and parity are key characteristics distinguishing the two groups. Women obtaining second or higher-order abortions were almost twice as likely as first-time patients to be aged 30 or older (32% vs. 18%). Similarly, the proportion of women without children was almost twice as high for first-time abortion patients as for women obtaining repeat abortions (53% vs. 24%) and, conversely, the proportion of repeat abortion patients with three or more prior births was more than twice that of first-time abortion patients (19% vs. 8%). Perhaps not surprisingly, then, women obtaining repeat abortions were more likely to indicate that they did not want to have any (more) children (not shown): Twenty percent of first-time abortion patients wanted no (more) children, compared with 33% of repeat abortion patients. More commonly, however, 43% of women obtaining repeat abortions did want (more) children and 24% were unsure.

*We did not assess whether differences between the two data sets were statistically significant.

There were smaller, though statistically significant, differences between the two groups according to race/ethnicity, union status, education and contraceptive use. Compared with first-time patients, repeat abortion patients were more likely to be black (38% of repeat abortion patients vs. 26% of women obtaining an abortion for the first time), and among women aged 25 and older, less likely to have a college degree (17% vs. 29%, respectively). Repeat abortion patients were also slightly more likely to have been married (19% vs. 15%), cohabiting (29% vs. 22%) or previously married (12% vs. 10%) than first-time abortion patients. While there were no differences in poverty levels between the two groups, repeat patients were slightly and significantly more likely to have had Medicaid coverage for general health care (26% vs. 23%). We also found sizeable differences in levels of repeat abortion according to whether or not the woman resided in a state that allowed Medicaid to pay for abortion services. In non-Medicaid states, 44% of abortions were repeat abortions, compared with 53% in states providing Medicaid coverage (not shown). Finally, women obtaining second or higher-order abortions were only slightly (but significantly) more likely than first-time patients to have been using a short-term hormonal method at conception (16% vs. 13%) and less likely to have been using condoms (28% vs. 31%).

We also tested for relationships between gestation, religious affiliation and repeat abortion, but found no significant associations (not shown). Among women obtaining first and repeat abortion, similar proportions were obtaining first trimester procedures (86% and 87%, respectively). And similar proportions of each group identified with the each religious affiliations: Protestant (43% and 44% for first time and repeat patients, respectively), Catholic (29% and 26%), another affiliation (7% and 8%) or no affiliation (22% and 23%).

Within several subpopulations, the majority of abortion patients had obtained their second or higher-order abortion (Table 4.3). These included women aged 25 and older (59–63% reported one or more prior abortions); women with one or more prior births (55–68%); women who were non-Hispanic black (57%), married (53%), cohabiting (55%) and previously married (53%); and among those aged 25 and older, women without a college degree (63–66%).

Because of the importance of age, we made these same comparisons across three age-groups—adolescents (15–19), women aged 20–29 and women aged 30 and older—to determine if associations between their characteristics and repeat abortion varied by age (see Appendix Table B2). Few of the patterns in repeat abortion differed for these subgroups, though there were a few exceptions.* One in five adolescents reported having had a prior abortion, but among those who were married or cohabiting (accounting for 2% and 18% of all adolescent abortion patients, respectively), almost one-third (31–36%) had had a prior abortion. Adolescents having abortions who got pregnant while using a hormonal method were also more likely than those who had used other methods to report that they had had a prior abortion (31% vs. 14–22%). Among women aged 30 and older, of whom 63% were obtaining repeat abortions, it is possible that economic disadvantage played a role, and prior abortions were more common among those who were poor or low income (68–69% compared with 57% among economically better-off women). Similar patterns are evidenced for Medicaid coverage among this group; 74% of abortion patients covered by Medicaid reported at least one prior abortion and 39% reported two or more, compared, respectively, with 60% and 27% among those not covered by Medicaid.

Predicting repeat abortion

Some of the characteristics associated with repeat abortion, such as number of children and marital status, are closely associated with age because older women are more likely to have (more) children and to be married. Logistic regression models allowed us to determine if these and other associations were maintained even after taking age into account.

As expected, as age increased so did the likelihood that women were obtaining a repeat abortion (Table 4.4); relative to adolescents, women aged 30 and older were five times more likely to be obtaining higher-order abortions. The likelihood of repeat abortion also increased incrementally with the number of women's prior births, even after controlling for age. Relative to women obtaining abortions who had had no prior births, those with one or two children were twice as likely to have had a prior abortion, net of their age, and the likelihood of having had a prior abortion was almost three times as high for those with three or more children.

After controlling for age and prior births, several characteristics were associated with having had multiple abortions, though the associations were weaker. Non-Hispanic black women were more likely to have had prior abortions than were non-Hispanic white

*We did not assess whether differences between groups by prior abortions were statistically significant.

women. Relative to women with college degrees, those with high school degrees (including those with "some college") were more likely to have had a prior abortion. Even when we control for age, it is possible that the lack of association between repeat abortion and not having a high school degree is due to the young age of many of the lesser educated women. The bivariate relationship between repeat abortion and never having been married (Table 4.2) was reversed once we controlled for age and other characteristics, and never-married and cohabiting women were more likely to have prior abortions than were married women. Poverty status was not associated with prior abortion, but Medicaid coverage, another measure of economic hardship, was associated with this outcome. Relative to women who used a barrier method at the time of pregnancy, users of hormonal methods were slightly more likely to have had a prior abortion.*

Given the importance of age and prior births in predicting prior abortions, we examined separate logistic regression models for women younger than 20, those aged 30 and older, and women with one or more children to determine if associations between sociodemographic characteristics and repeat abortion differed by subpopulation (Appendix Table B3, columns 2–4). With only a few exceptions, we found that predictors of repeat abortion are the same for all three groups. Among adolescents, Hispanic, black and other young women of color were significantly more likely than white adolescents to have had a prior abortion. The association between prior abortion and use of hormonal methods appears to be limited to adolescents. Relative to women using a barrier method when they became pregnant, use of short-term hormonal methods was positively associated with prior abortion among adolescents (odds ratio, 2.5), and the association was either negative or statistically insignificant among the other age groups and those with one or more children.

Repeat abortion and contraceptive use patterns

Contrary to the public perception that repeat abortion is an indication that some women rely on abortion as a primary method of contraception, prior research suggests that women obtaining second or higher-order abortions are actually more likely than first- time abortion patients to have become pregnant while using a contraceptive method. We use the 2000–2001 APS to compare contraceptive use patterns between first-time and repeat abortion patients to assess these somewhat conflicting arguments.

Repeat abortion patients were significantly more likely to have ever used contraceptives than were first-time abortion patients (94–95% vs. 89%, Table 4.5), likely due to their older age. Younger women, and adolescents in particular, are both less likely to have ever used a method and less likely to have had a prior abortion. Fifty-four percent of women obtaining their first abortion were using contraceptives when they became pregnant. The percentage did not differ significantly among women obtaining their second abortion, but was slightly and significantly lower for women obtaining their third or higher-order abortion (50%). Women who were obtaining their second, but not their third or higher-order, abortion were slightly but significantly more likely than first-time abortion patients to have become pregnant while using a hormonal method (16% vs. 13%).

We examined method failure among women who became pregnant while using the pill or a barrier method. There were only a few differences in women's reasons for method failure according to their number of prior abortions. Approximately three-quarters of pill users became pregnant because of (self-reported) inconsistent pill use, and this was significantly more common among pill users obtaining third or higher-order abortions (81%). Among barrier method users, inconsistent use was the most common reason for method failure (47% to 54%), followed by slippage and breakage (39–42%), and there were no significant differences in reasons for barrier method failure according to number of prior abortions.

Among women having abortions who had not been using a method when they became pregnant, those who were obtaining their second or higher-order abortion were significantly less likely than first-time patients to indicate that a perceived low risk of pregnancy was a reason for nonuse (35% vs. 31%). It is possible that women who had previously been pregnant were more aware of their potential to become pregnant. However, three in 10 women who had had a prior abortion and were not using a method failed to do so because of a perceived low risk of pregnancy. Women obtaining second or higher-order abortions were more likely than first-time patients to indicate that problems with contraceptive methods were a reason they had not used contraceptives (34–37% vs. 30%), and less likely to indicate that unexpected sex was a reason for nonuse (18–25% vs. 31%). Age differences may partially ex-

*In order to test for associations between gestation and prior abortions, we initially included a measure of weeks pregnant at the time of the abortion. None of the associations were significant, and we did not include the variable in the final analysis.

plain this last association, since older women are more likely to be in relationships where sex occurs predictably and may therefore be able to realistically assess their likelihood of sexual activity. Finally, women obtaining third or higher-order abortions were more likely than first-time abortion patients to indicate that problems accessing methods was a reason for nonuse (15% vs. 12%, respectively).

Predicting contraceptive use patterns

We examined logistic regression models predicting use of (1) any method at the time of pregnancy, and, among women who became pregnant while using contraceptives, (2) pill or injectable at the time of pregnancy, and (3) barrier method use at the time of pregnancy. We found no support for the popular perception that women who obtain repeat abortions use it as a method of birth control, but, at the same time, found only limited support for the hypothesis that having had prior abortions is associated with increased levels of contraceptive use at the time of pregnancy (Table 4.6). Prior abortion experience neither increased nor decreased the likelihood that women were using a contraceptive method (as opposed to no method) when they became pregnant, and the bivariate association between nonuse of contraceptives and third or higher-order abortions (Table 4.5) disappeared once we controlled for race/ethnicity and education.

Several characteristics predict whether women having abortions were using a contraceptive method when they became pregnant (Table 4.6, column 1). Women of color, including Hispanic women, were less likely than white women to have been using a method as were women who had one (but not more) prior birth(s), had a high school degree or less, were previously married, or were obtaining abortions more than six weeks after their last menstrual period.

Among women who became pregnant while using a method, having had a prior abortion slightly increased the likelihood that the women had been using a short-term hormonal method, as opposed to some other type of method (odds ratios, 1.2 for second abortions and 1.3 for third or higher-order abortions, respectively). Other characteristics that predicted short-term hormonal method use around the time of conception were having had one or more prior births and currently cohabiting. Being black or belonging to another (non-Hispanic) race were negatively associated with short-term hormonal method use at conception. Among abortion patients who got pregnant while using contraceptives, those who had had an abortion more than six weeks after their last period were more likely to have been using a short-term hormonal method than those who had the abortion within six weeks of their last period. One potential interpretation of this association is that use of hormonal methods delays the recognition of pregnancy.

There was no association between barrier method use and prior abortion, probably because the comparison group was made up predominantly of hormonal method users.* Characteristics associated with use of a barrier method vs. any other method include having three or more children (negative), being black (positive) or Hispanic (negative), obtaining an abortion during the second trimester (negative), and being never married or previously married (positive).

Are risky situations and behaviors associated with repeat abortion?

One study found that violence in women's lives is a risk factor for repeat abortion,[54] but subsequent research has yet to examine this issue. The 2000–2001 APS did not include items about violence, but Guttmacher's 2004 Abortion Reasons and Logistics Survey did ask women obtaining abortions if one reason they were terminating the pregnancy was because their partner was abusive. Only 5% of women indicated that an abusive partner was a contributing factor† and there was no significant difference between first-time and repeat abortion patients indicating this response (4% and 6%, respectively, data not shown)

We were able to conduct exploratory analysis of violence and other potential risk factors using the 2002 National Survey of Family Growth (NSFG). This data source contains only limited information about lifetime experience with sexual violence and no measure of other types of intimate partner violence, but we used these data to explore potential associations of repeat abortion and other risk factors, including drug and alcohol abuse, overall poor health and difficulties with prior pregnancy. It bears repeating that the NSFG data

*We generated logistic regression models that were restricted to condom users and nonusers (see Appendix B, Table 4) in order to determine if prior abortion increased the likelihood that a woman subsequently used condoms, as opposed to no method. There were no differences in use of condoms vs. no method between women obtaining first and second abortions. However, women obtaining third or higher-order abortions were slightly, but significantly, less likely than first-time abortion patients to have been using a condom (as opposed to no method) when they became pregnant.

†It is possible that a higher proportion of women obtaining abortions experienced partner abuse, but this circumstance did not influence their decision to access abortion services. Alternately, some women may have been reluctant to report experiences with intimate partner violence.

on abortion are incomplete, as only about half of abortions are reported in the 2002 NSFG.[55] For this reason, we consider these findings to be exploratory.

While some of the risk factors were more common among women who reported a prior abortion on the 2002 NSFG, none distinguish between women who reported one (lifetime) abortion and those who reported two or more abortions. Among sexually experienced women aged 18–44, 8% of those who reported no lifetime abortions indicated that their first experience of vaginal intercourse was involuntary (Table 4.7).* This proportion was slightly higher for women reporting one and two or more abortions (10% and 12%, respectively), though none of the differences between groups was statistically significant.

Similarly, 15% of women reporting no prior abortions had ever been coerced into having vaginal sex with a man. Experience with coerced sex was substantially (and significantly) higher among women who reported any abortions (32–33%), but both first-time and repeat abortion groups were equally likely to have ever experienced coerced sex.

Women who reported two or more abortions were significantly more likely than those reporting none to have used illicit drugs, including marijuana, cocaine, injectable drugs or crack, in the last year (22% vs. 16%), though they did not differ from women who reported having had one abortion (20%). Levels of binge drinking in the last year did not differ by number of reported abortions.

Poor health may compromise women's ability to carry a pregnancy to term, even when the pregnancy is wanted. We examined several potential indicators of health problems, including prior pregnancy problems, but found no associations with reported abortions to support this hypothesis.

Lack of statistically significant associations between repeat abortion and sexual violence or illicit drug use may be due to the sensitive nature of all three items. Prior research has found that some respondents fail to report use of illicit drugs and sexual violence, due to stigma and fear. Thus, the hypothesis that there are associations between these risk factors and repeat abortion cannot be rejected.

Timing of repeat abortion

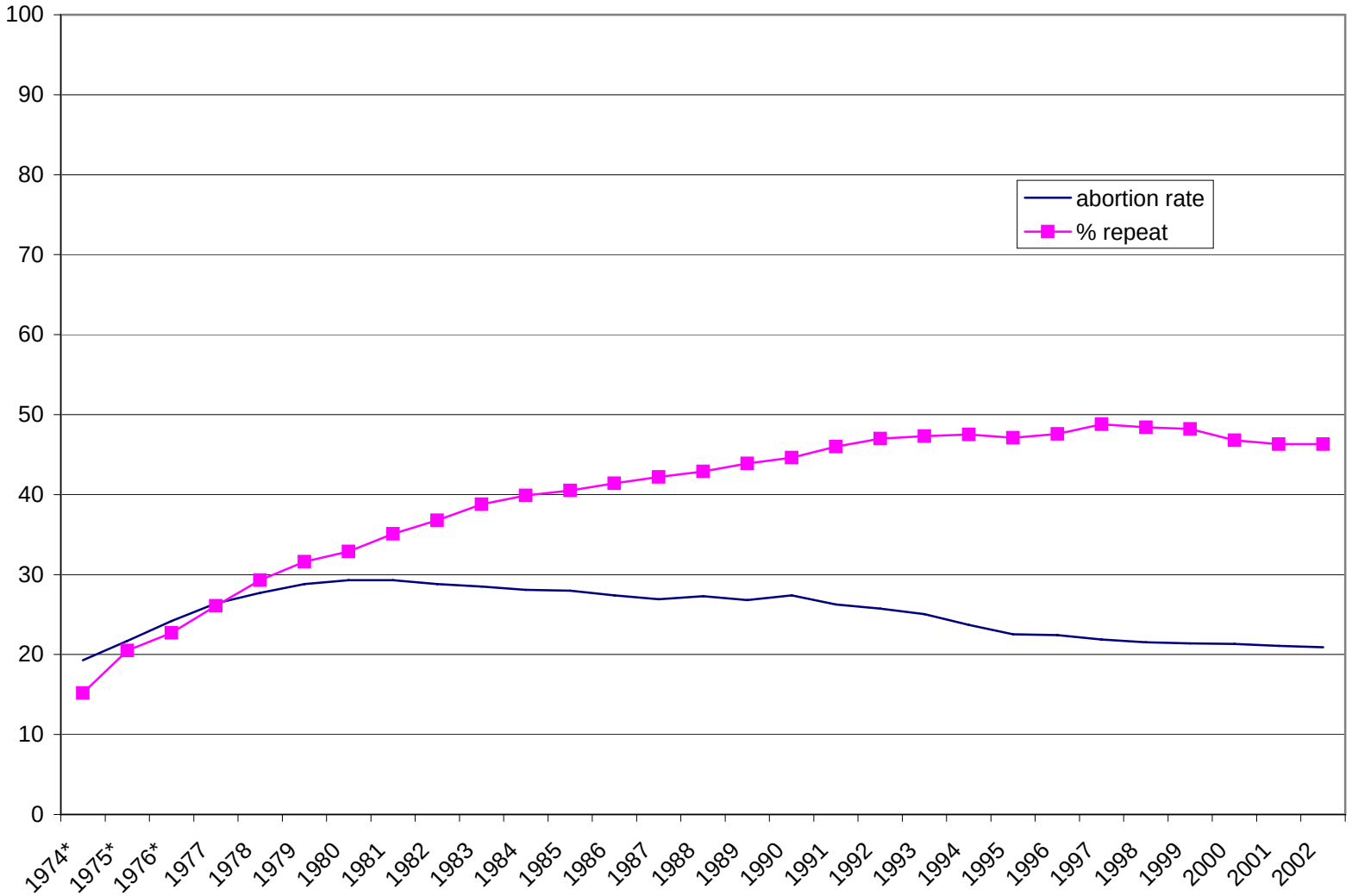
The 2002 NSFG collected information on dates of reported abortions during the face-to-face interviews, allowing us to conduct an exploratory examination of the time span between abortions. However, in addition to the problem of underreporting, it is highly likely that the dates of the events were inaccurately reported by a number of women. At least one U.S. study comparing self-reports of abortion to health insurance records found that, among women who report having had any prior abortions, only about half accurately reported their abortions as happening within one year of the actual date of occurrence.[56] Similar inaccuracies have been found in the reporting of spontaneous abortions.[57] Thus, this analysis can only highlight potential patterns in timing of repeat abortions to be explored in subsequent research.

The average, or mean, time span between abortions reported on the 2002 NSFG was 44 months (not shown). This is longer than the 27 month span in 1978 identified by Tietze,[58] but not long enough to suggest that most repeat abortions are a result of unintended pregnancies occurring near the beginning and end of women's reproductive years. Even among women aged 35 and older who reported more than one abortion, the average span between abortions was 51 months.

Among women reporting two or more abortions, almost three-quarters of abortions (74%) were reported to have occurred within five years of the prior procedure. More specifically, 42% of second or higher-order abortions were obtained within two years of the preceding termination and 32% were obtained 2–5 years after the preceding abortion (not shown). There is some indication that third and higher-order abortions are even more closely spaced; 50% occurred within two years of the prior abortion, 31% were 2–5 years after the prior abortions and only 19% were five or more years after the prior abortion.

*Items about involuntary and forced sex were not asked of respondents younger than age 18 or of those who had never had sex.

Chart 4.1 Trends in abortion rate and repeat abortion, 1974–2002



*Information on prior abortions was unknown for more than 10% of reported abortions.

TABLE 4.1 Number of abortions and abortion rate (abortions per 1,000 women aged 15–44) in 2000, by state of occurrence, and proportion of abortion patients obtaining repeat abortions†

(Repeat) year	State	Number of abortions	Abortion rate	% repeat abortion
2002	Alabama	13,830	14.3	35.4
1999	Arizona	17,940	16.5	36.7
2002	Arkansas	5,540	9.8	38.3
2002	Colorado	15,530	15.9	34.4
2002	Delaware	5,440	31.3	43.2‡
2002	Georgia	32,140	16.9	39.3
2002	Hawaii	5,630	22.2	43.2
2002	Idaho	1,950	7.0	24.2
2002	Indiana	12,490	9.4	37.5
2002	Iowa	5,970	9.8	37.2‡
2002	Kansas	12,270	21.4	40.3
2002	Kentucky	4,700	5.3	45.3
2002	Maine	2,650	9.9	33.7
2002	Maryland	34,560	29.0	71.5‡
2002	Massachusetts	30,410	21.4	47.2
2002	Michigan	46,470	21.6	49.2
2002	Minnesota	14,610	13.5	40.7
2002	Mississippi	3,780	6.0	34.5
2002	Missouri	7,920	6.6	43.1
2002	Montana	2,510	13.5	44.3
2002	Nebraska	4,250	11.6	30.6
2002	Nevada	13,740	32.2	45.7
2002	New Jersey	65,780	36.3	32.8§
2002	New Mexico	5,760	14.7	32.2
2000	New York	164,630	39.1	51.6
2000	North Carolina	37,610	21.0	39.5††
2002	North Dakota	1,340	9.9	28.0
2002	Ohio	40,230	16.5	49.5††
2002	Oklahoma	7,390	10.1	38.1
2002	Oregon	17,010	23.5	45.0
2002	Pennsylvania	36,570	14.3	45.0
2002	Rhode Island	5,600	24.1	45.7
2002	South Carolina	8,210	9.3	38.8
2002	South Dakota	870	5.5	9.3
2002	Tennessee	19,010	15.2	48.1
2002	Texas	89,160	18.8	41.3
2002	Utah	3,510	6.6	35.3
2002	Vermont	1,660	12.7	40.3
2002	Virginia	28,780	18.1	45.4
2002	Washington	26,200	20.2	46.9
2002	West Virginia	2,540	6.8	35.2
1999	Wyoming	100	1.0	28.2

Sources: **Number of abortions and abortion rates by state**—Finer and Henshaw, 2003 (see reference 37). Repeat abortions—Special tabulations of uncorrected CDC published figures for the most recent year available (1999–2002); reported procedures with missing information on prior abortions were not included in the denominator.

†Data not available for Alaska, California, Connecticut, Florida, Illinois, Louisiana, New Hampshire, Wisconsin or the District of Columbia. ‡Includes residents only. §Does not include private physicians' procedures. ††More than 10% missing repeat abortion (missing excl. from calculation).

TABLE 4.2 Percentage distribution of women aged 15–44, by social and demographic characteristics, 2002 NSFG; and percentage distribution of women who have had abortions, by social and demographic characteristics, according to number of abortions, 2000–2001 APS

Characteristic	2002 NSFG	2000–2001 APS			
	Women aged 15–44 (N=7643)	Total (N=10683)	1st abortion (N=5548)	2nd or higher order abortion (N=5135)	
Age					
<20	16.0	19.1	29.4	8.1	***
20–24	16.0	33.0	34.5	31.5	*
25–29	15.0	23.1	18.4	28.2	***
30–34	16.7	13.5	9.8	17.6	***
35+	36.3	11.2	7.9	14.7	***
Number of prior births					
0	41.6	39.1	52.7	24.5	***
1	18.2	27.4	23.6	31.4	***
2	21.8	20.3	15.5	25.5	***
3+	18.3	13.2	8.1	18.6	***
Race/ethnicity					
White non-Hispanic	65.7	40.9	45.5	35.9	***
Black non-Hispanic	13.9	31.7	26.2	37.7	***
Other non-Hispanic	5.6	7.3	8.0	6.5	*
Hispanic	14.8	20.1	20.3	19.8	
Education†					
Less than high school	11.6	12.2	10.5	13.3	*
High school degree	30.4	28.2	25.1	30.2	***
Some college/associates degree	29.3	38.0	35.7	39.4	*
College degree	28.7	21.6	28.7	17.0	***
Union status					
Married	46.0	17.0	15.3	18.9	***
Cohabiting	9.0	25.4	22.0	29.2	***
Previously married	9.9	10.9	9.9	11.9	**
Never married	35.0	46.6	52.7	40.0	***
Poverty level					
<100%	19.1	26.6	25.8	27.4	
100–199%	20.9	30.8	30.4	31.2	
200% or more	60.0	42.6	43.8	41.4	
Medicaid coverage					
Yes	10.3	24.2	22.5	26.1	***
No	89.7	75.8	77.5	73.9	***
Contraceptive use (current or at time of conception)					
Tubal or vasectomy	32.3	0.0	0.1	0.0	
Reversible long-acting‡	2.2	0.1	0.1	0.2	
Pill, patch or injectable	32.8	14.5	13.4	15.7	**
Barrier	16.6	29.4	30.8	27.9	**
Other	5.4	9.6	9.8	9.3	
None	10.7	46.3	45.8	46.8	
Total	100.0	100.0	100.0	100.0	

*p<.05; **p<.01; ***p<.001; T-tests were used to test for differences in characteristics between first-time and repeat abortion patients (columns 3 and 4).

†Includes women aged 25 and older. ‡Includes the IUD and contraceptive implants (i.e., norplant).

TABLE 4.3 Percentage distribution of women who have had abortions, by social and demographic characteristics, according to number of abortions, 2000–2001 APS

Characteristic	Abortion			
	First (N=5548)	Second (N=3111)	Third or higher (N=2024)	Total (10,683)
Total	51.8	29.0	19.2	100.0
Age				
<20	79.6	16.6	3.8	100.0
20–24	54.1	29.8	16.0	100.0
25–29	41.3	33.0	25.7	100.0
30–34	37.5	33.7	28.8	100.0
35+	36.8	33.6	29.5	100.0
Number of prior births				
0	69.9	21.0	9.1	100.0
1	44.7	34.0	21.3	100.0
2	39.6	34.2	26.2	100.0
3+	32.0	34.2	33.8	100.0
Race/ethnicity				
White non-Hispanic	57.7	28.5	13.7	100.0
Black non-Hispanic	42.8	31.6	25.7	100.0
Other non-Hispanic	56.9	24.5	18.7	100.0
Hispanic	52.4	27.5	20.1	100.0
Education†				
Less than high school	33.5	33.1	33.4	100.0
High school degree	34.9	35.1	30.0	100.0
Some college/associates degree	36.8	33.4	29.7	100.0
College degree	52.0	31.1	16.9	100.0
Union status				
Married	46.7	31.2	22.1	100.0
Cohabiting	44.8	32.1	23.1	100.0
Previously married	47.3	32.3	20.4	100.0
Never married	58.6	25.7	15.6	100.0
Poverty level				
<100%	50.3	28.5	21.1	100.0
100–199%	51.2	29.5	19.3	100.0
200% or more	53.2	28.9	17.9	100.0
Medicaid coverage				
Yes	48.2	28.0	23.8	100.0
No	53.0	29.3	17.7	100.0
Current contraceptive use				
Long-acting‡	55.0	25.0	20.0	100.0
Pill or injectable	47.8	32.9	19.3	100.0
Barrier	54.3	28.9	16.8	100.0
Other	53.1	27.3	19.6	100.0
None	51.3	28.2	20.5	100.0

†Includes women aged 25 and older. ‡Includes contraceptive sterilization, the IUD and contraceptive implants (i.e., norplant).

TABLE 4.4 Odds ratios of social and demographic characteristics predicting whether women having abortions have had one or more prior abortions, 2000–2001 APS

Characteristic	All women (N=10683)	
Age		
<20	1.00	
20–24	2.57	***
25–29	4.14	***
30–34	4.96	***
35+	5.42	***
Number of prior births		
0	1.00	
1	2.04	***
2	2.13	***
3+	2.62	***
Race/ethnicity		
White non-Hispanic	1.00	
Black non-Hispanic	1.70	***
Other non-Hispanic	1.12	
Hispanic	1.21	
Education		
Less than high school	1.24	
High school degree	1.48	***
Some college/associates degree	1.52	***
College degree	1.00	
Union status		
Married	1.00	
Cohabiting	1.63	***
Previously married	0.96	
Never married	1.32	**
Poverty level		
<100%	0.89	
100–199%	0.92	
200% or more	1.00	
Medicaid coverage		
Yes	1.18	**
Current contraceptive use		
Long-acting†	0.52	
Pill or injectable	1.21	*
Barrier	1.00	
Other	0.98	
None	1.05	

*p<.05; **p<.01; ***p<.001

†Includes contraceptive sterilization, the IUD and contraceptive implants (i.e., norplant).

TABLE 4.5 Percentage distribution of women having abortions, by levels of contraceptive use and problems with methods, according to number of prior abortions, 2000–2001 APS

	All women having abortions			
Total	First (N=5548)	Second (N=3111)	Third (N=2024)	Unweighted N (N=10683)
Ever use contraception	89.5	94.6 ***	94.0 ***	9,804
Using contraception around time got pregna	54.2	54.9	50.5 *	5,726
Method use at conception				
Long-acting†	0.2	0.2	0.2	117
Pill or injectable	13.4	16.4 **	14.6	1,458
Barrier	30.8	29.3	25.8 **	3,140
Other	9.8	9.0	9.8	1,011
None	45.8	45.1	49.5 *	4,957
Reason for failure among pill users‡				1,458
Used method perfectly	12.1	14.6	11.2	188
Failed due to irregular use	75.0	74.1	81.2 *	1,109
Other reason for pill failure	16.5	14.7	11.5 *	215
Reason for failure among barrier users§‡				3,140
Used method perfectly	15.5	13.2	13.4	451
Used method inconsistently	49.2	47.0	54.0	1,550
Method slipped	38.7	41.0	41.6	1,255
Other reason	3.1	4.9 *	3.9	121
Reasons for nonuse of method‡				4,957
Perceived low risk of pregnancy	35.3	30.9 **	30.5 **	1,648
Problems with methods	29.6	33.7 **	37.3 ***	1,597
Unexpected sex	30.7	25.2 ***	17.6 ***	1,321
Contraceptive ambivalence	22.7	19.0 **	22.1	1,067
Problems accessing methods	11.6	10.7	14.6 *	592
Partner had problem with methods	10.9	9.8	10.0	514
Total	100.0	100.0	100.0	100.0

*p<.05; **p<.01; ***p<.001

†Includes IUD, contraceptive sterilization and norplant. ‡Multiple responses allowed and columns may total to >100%. §Includes male and female condom, diaphragm, jelly, cream, film, sponge, foam and suppositories.

TABLE 4.6 Odds ratios predicting contraceptive use, according to prior abortions, 2000–2001 APS

Characteristic	User vs nonuser (N=10683)	Pill/ injectable vs all other method users (N=5726)	Barrier method† vs all other method users (N=5726)
Number of abortions			
1	1.00	1.00	1.00
2	1.05	1.24 *	0.94
3	0.93	1.26 *	0.83
Age			
<20	1.00	1.00	1.00
20–24	0.98	1.23 *	0.86
25–29	1.02	1.00	0.84
30–34	1.05	0.89	0.88
35+	1.06	0.49 ***	1.14
Number of prior births			
0	1.00	1.00	1.00
1	0.86 **	1.35 **	0.91
2	0.97	1.37 **	0.92
3+	0.91	1.69 ***	0.77 *
Race/ethnicity			
White non-Hispanic	1.00	1.00	1.00
Black non-Hispanic	0.63 ***	0.76 **	1.23 **
Other non-Hispanic	0.60 ***	0.59 **	1.25
Hispanic	0.68 ***	0.96	0.83 *
Education			
Less than high school	0.58 ***	0.81	1.28
High school degree	0.62 ***	0.91	1.12
Some college/associates degree	0.91	0.98	1.06
College degree	1.00	1.00	1.00
Union status			
Married	1.00	1.00	1.00
Cohabiting	0.96	1.35 **	0.86
Previously married	0.83 *	1.07	1.26 *
Never married	0.97	0.98	1.26 *
Poverty level			
<100% poverty	0.96	1.01	1.03
100–199%	0.99	0.87	1.06
200% or more	1.00	1.00	1.00
Medicaid coverage	0.90	1.03	0.87
Number of weeks gestation			
≤6	1.00	1.00	1.00
7–11	0.91 *	1.24 ***	0.89
≥12	0.79 **	1.90 ***	0.71 ***

*p<.05; **p<.01; ***p<.001

†Includes male and female condom, diaphragm, jelly, cream, film, sponge, foam and suppositories.

TABLE 4.7 Percentage distribution of women in "risk" groups, by risk factor, according to number of reported lifetime abortions, 2002 NSFG self-administered survey

Risk factors	0 lifetime abortions (N=6173)	1 lifetime abortion (N=889)	2+ lifetime abortions (N=581)	Statistical significance between abortion groups 0 vs 1	0 vs 2+	1 vs 2+
First sex was involuntary†	7.8	9.6	12.4		*	
Ever forced to have sex†	15.1	33.1	31.8	***	***	
Engaged in binge drinking on weekly basis in last year	5.1	6.3	8.0			
Used illicit drugs in the last year	15.5	19.5	22.0	*	*	
Overall health is fair to poor	6.8	8.9	7.7			
Had help preventing miscarriages	5.5	6.9	8.3			
Had help getting pregnant	9.7	5.0	6.7	***	*	

*p<.05; **p<.01; ***p<.001

†Only asked of sexually experienced women aged 18 or older at interview

Chapter 5

Unintended Pregnancies (and Births) as the Context for Repeat Abortion

It is important to place abortion in the context of its precipitating event, unintended pregnancy, and to recognize that three main pregnancy outcomes—birth, abortion, and miscarriage or other fetal loss—can follow. Repeat abortion is a clear indicator of repeat unintended pregnancy. But most women who have abortions already have children, and this is particularly true for women who have terminated more than one pregnancy. It is possible, if not likely, that women who have had a prior abortion have also had other unintended pregnancies, some of which they carried to term. This chapter relies on data from the 2002 NSFG to explore patterns in lifetime incidence of unintended pregnancy, including repeat unintended pregnancy and birth.

While 16% of the reported pregnancies in the 2002 NSFG ended in spontaneous abortion (miscarriage) or other fetal loss, our focus here is on pregnancies for which the resolution was decided by the woman. Therefore, the pregnancy data presented exclude pregnancies that ended in fetal loss. Reporting of live births is quite accurate on the 2002 NSFG,[59] but, as with other analyses in this report that are based on these data, our pregnancy figures do not take into account underreporting of abortions, and the actual incidence of lifetime unintended pregnancies is higher. Though we are unable to accurately examine the overlap between women who have repeat abortions and women who have unintended births, if women who have unintended births share the same characteristics as those who have more than one abortion, it would suggest that the two populations overlap.

Almost one-third (31%) of women aged 15–44 reported having had at least one unintended birth, and four in 10 have had at least one unintended pregnancy. Seventeen percent of women 15–44 reported two or more unintended pregnancies, including 11% who had two or more unintended births (Table 5.1). Some of the same characteristics that distinguish first-time and repeat abortion patients also distinguish between women having one or more unintended pregnancies or births; these include age, prior births and race. For example, more than half of women aged 35 and older had had one or more unintended pregnancy (53%) and more than one-third had had an unintended birth (39–40%).

Similarly, as the number of prior births (intended or unintended) increases, so does the likelihood of having had an unintended pregnancy or birth and of having had multiple unintended pregnancies or births. Among women who had had only one birth, 38% reported that it was unintended; this proportion increased with each additional birth and more than two-thirds of women with three or more births had had at least one that was unintended.

Associations between race/ethnicity and having had an unintended birth are particularly striking, as are those between poverty and having had an unintended birth. Slightly less than one-half of black women had had at least one unintended birth (45%), and among black women aged 35–44 (not shown), 57% have done so. Indeed, one in five black women had had two or more unintended births and 8% have had three or more. Similarly, 40–43% of poor and low income women aged 15–44 had had at least one unintended birth, compared with 23% among higher-income women. Both of these demographic disparities hold true for unintended pregnancies and multiple unintended pregnancies, as well.

The above patterns suggest that women at risk for repeat abortion share many of the same characteristics of women at risk for repeat unintended births. Despite the underreporting of abortion, we examined the overlap of these two populations using the 2002 NSFG. It is the case that repeat abortion is more common among women who have had multiple unintended births, though the associations are not strong: Nine percent of women who had had two or more unintended births reported multiple abortions compared with 7% and 4% of women who report one or no unintended births (not shown). Among women who reported multiple abortions, 53% reported no unintended births; 27% reported one unintended birth and 20% reported two or more.

Thus, our exploratory analysis suggests that there is some overlap between women who experience multiple abortions and those who have unintended births, but there may also be non-overlapping populations within each group. For example, some women who find themselves confronted with an unintended pregnancy will not have an abortion, either because they are unwilling to do so or, perhaps less commonly, because they are unable to access abortion services. Again, only half of abortions are reported on the NSFG; it is unclear how more accurate data might affect these patterns.

TABLE 5.1 Percentages of women aged 15–44, by selected characteristics, according to number of reported lifetime unintended births and unintended pregnancies, 2002 NSFG

	% reporting (number of) unintended births				% reporting (number of) unintended pregnancies†			
	1+	1	2	3+	1+	1	2	3+
Characteristic	(N=2449)	(N=1572)	(N=588)	(N=289)	(N=3149)	(N=1750)	(N=819)	(N=580)
% all women reporting	30.8	19.8	7.3	3.7	39.7	22.4	10.3	7.0
Age								
15–19	6.9	6.5	0.4	0.0	9.5	7.9	1.4	0.2
20–24	22.3	15.8	5.0	1.5	28.7	19.7	6.6	2.4
25–29	37.1	23.8	8.2	5.1	44.6	25.4	10.3	9.0
30–34	36.6	22.9	10.2	3.5	46.8	24.6	14.3	7.9
35–39	40.1	24.5	9.8	5.8	52.5	29.4	12.7	10.4
40–44	39.3	24.0	9.5	5.8	52.7	26.0	15.6	11.0
Number of prior births								
1	37.7	37.7	na	na	49.7	39.3	7.5	2.9
2	49.2	35.1	14.1	na	58.9	35.9	17.1	6.0
3	67.8	32.6	24.1	11.2	74.5	29.1	27.5	18.0
4+	77.8	21.9	21.1	34.9	80.0	19.4	19.9	40.7
Race/ethnicity								
White non-Hispanic	26.2	17.9	6.0	2.3	35.6	21.2	9.4	5.0
Black non-Hispanic	44.7	24.8	11.6	8.3	55.4	25.7	14.4	15.2
Other non-Hispanic	24.7	14.7	5.0	4.9	34.3	19.4	7.1	7.8
Hispanic	40.1	25.4	9.9	4.9	45.3	25.4	12.0	7.8
Poverty level								
<100%	43.3	22.7	11.7	8.9	48.7	24.0	12.0	12.7
100–199%	40.5	24.8	11.1	4.6	46.9	25.3	13.1	8.4
200+%	23.4	17.1	4.6	1.7	100.0	20.9	8.9	4.7

†Refers to unintended births and abortions; does not include unintended miscarriages, stillbirths or ectopic pregnancies.

Chapter 6

Reducing the Need for Repeat Abortion

Given current abortion rates, 35% of women will have an abortion by age 45, and a similar proportion will have one or more unintended births. Although this report focuses on repeat abortion, this phenomenon reflects the larger experience of abortion and unintended pregnancy in general. By default, therefore, efforts to reduce unintended pregnancy will reduce the incidence of repeat abortion. Information from this report is intended to inform such strategies.

As long as unintended pregnancy remains a common experience in the United States, women will need to access abortion services, and some will need to do so more than once. Within the population of women terminating their pregnancies, those having repeat abortions are older, more likely to have (more) children, and, once these characteristics are taken into account, less likely to be married. Though less influential than age and prior births, race and education are also associated with having had prior terminations. Overall, these results suggest that some groups of women have multiple unintended pregnancies—some resulting in births, some in abortion—and that women rely on repeat abortion when they find themselves unable to care for a(nother) child or have already met their childbearing goals.

In line with prior studies, our analyses found that women obtaining repeat abortions were more likely than first-time patients to have been using a hormonal method of contraception when they got pregnant, though only slightly so; moreover, this association may be restricted to adolescents. These finding suggests that some young women obtaining abortions are subsequently provided access to hormonal methods or become motivated to obtain effective methods, but they go on to have problems using or obtaining them.*

We found no evidence that women use repeat abortion as a primary method of family planning, and nonuse of contraceptives at the time of conception was not predicted by having had prior abortions. At the same time, regardless of prior abortions, approximately half of women terminating their pregnancies were not using contraceptives when they became pregnant. This pattern suggests that women obtaining abortions would benefit from programs and services that would help them avoid subsequent unintended pregnancies.

One obvious strategy for avoiding unintended pregnancy is improving contraceptive use. While it is likely that many, if not most, providers of abortion services offer contraceptive counseling, referrals or services,[60] there is little research on the types or range of services that are offered. It is not known, for example, if providers counsel women about a full or selected range of methods, if they are able to provide a full range of methods on site, if methods are provided at first or follow-up visits for abortion services, or whether providers offer referrals for family planning services. Subsequent research should assess the level and types of contraceptive services offered by abortion providers so that effective strategies can be developed to expand and improve them. Just as importantly, research should examine women's perceptions and evaluations of contraceptive counseling received around the time of the abortion, their contraceptive preferences and concerns about methods, and their recommendations for ways that abortion providers could help them avoid unintended pregnancy.

Improving contraceptive services is an obvious strategy to help women obtaining abortions avoid subsequent unintended pregnancies, but recent studies of this population (in Scotland and in Iceland) have found that more intensive contraceptive counseling and service provision did not improve contraceptive use or adherence 4–6 months after a pregnancy termination.[61] And a review of counseling practices (most focusing on contraception) intended to reduce unintended pregnancy failed to find programs that provide strong guid-

*Some women who initiate use of hormonal methods after a first abortion are able to use the methods effectively and do not obtain repeat abortions. Unfortunately, the size of this population is unknown.

ance for these types of interventions.[62] That does not mean that women obtaining abortions should not receive contraceptive counseling and services, but it suggests that new strategies need to be developed and tested. For example, providers might prioritize the integration of newer, longer-acting methods that present less room for user error, such as the patch, the vaginal ring, injectables and the contraceptive implant (Implanon, lasts for up to three years).

Another underutilized method is the IUD. Studies of postabortion IUD insertion are promising: Rates of infection, expulsion, discontinuation and pregnancy are relatively low five years postabortion.[63] Some IUDs can be inserted at the end of the abortion procedure, though this may be associated with a higher rate of expulsion relative to delayed insertion.[64] IUDs are highly cost-effective over the long run,[65] but up-front costs are high under current conditions in the United States. However, there is some help available through the ARCH Foundation (a nonprofit agency funded by Berlex) to supply hormone-releasing IUDs to low-income women. Other sources of funding for this method may also be available. Apart from access issues, the IUD is not a widely used contraceptive method due to lasting stigma from the poor design of models 30 years ago. A larger educational campaign to counter myths about risks from the IUD, directed at the medical community as well as consumers, might increase acceptability of this method. And, of course, contraceptive options other than IUDs have to be addressed. If health care providers who work with women who have had abortions have opportunities to brainstorm, they may be able to develop innovative and effective practices to improve contraceptive use among this, and potentially other, populations.

Another strategy for potentially reducing the incidence of repeat abortion is to provide all women obtaining abortions with several regimens of emergency contraception. Providing information about emergency contraception is not enough as women are likely to face obstacles if and when they try to obtain it. However, if women leave the clinic with the actual pills, they will be more likely to use them.[66] Most abortion patients who got pregnant while using contraception were aware that they had used the method inconsistently or incorrectly, and one-quarter of nonusers identified unexpected or unwanted sex as a reason for nonuse.[67] Emergency contraception is particularly appropriate for women who find themselves confronted with these situations after an abortion. Clinical studies have failed to document a significant decline in pregnancy due to use of emergency contraception,[68] but women having abortions are at greater risk of unwanted pregnancy than the population as a whole—they are known to be fertile, sexually active and wishing to avoid pregnancy—and emergency contraception could have a measurable impact on rates of unintended pregnancy for this population of women. Many abortion patients cannot afford to purchase multiple doses of emergency contraception, so new funding strategies or demonstration programs need to be developed to make advance provision a feasible and effective tactic.

Contraceptive counseling by abortion service providers cannot be the sole, or even the primary, strategy for improving contraceptive use among women who wish to avoid or delay subsequent pregnancies. Contraceptive use is an ongoing process, and abortion is a finite one, typically consisting of only two or three visits. Some women are anxious about the abortion procedure and unable to focus on information provided during contraceptive counseling sessions that occur around this time; other women do not return for their abortion follow-up visits. Another limitation faced by abortion providers is understaffing. Providers may not be able to devote significant time and staff to comprehensive contraceptive services. Such challenges make abortion-related visits a less-than-ideal time to provide women with contraceptive services.

Structural barriers also limit the ability of abortion service providers to improve contraceptive use. While some are able to give patients a limited supply of birth control pills at a reduced cost or free, some women are unable to continue this, or other, hormonal methods as they cannot afford the refills or the periodic medical visits required to obtain them. Increased eligibility for Medicaid family planning services through state-initiated waivers or on a national basis may alleviate these problems, as it would facilitate access to contraceptive and other sexual health services.

Title X is the only federal program devoted solely to the provision of family planning and related preventive health services to all who need them, with priority given to low-income women. Increased funding for Title X is important, as it would provide low-income women with a better chance of avoiding future unintended pregnancies. However, current federal regulations make it logistically difficult for providers of abortion services to receive Title X funds; for example, Title X recipients are required to demonstrate physical and financial separation of abortion-related activities from Title X project activities. This "wall of separation" has been counterproductive: Its purported pur-

pose has been to prevent Title X funds from being used indirectly to facilitate access to abortion services, but it is also prevents abortion providers from facilitating access to contraceptive services for those women who wish to prevent subsequent unintended pregnancies. Congress and the administration would do well to revisit the price of continued separation. In the mean time, new "demonstration" programs intended to initiate, improve and evaluate contraceptive services among abortion providers might be developed through funding from federal, state and private sources.

For many women, the extent to which they are able to use contraceptives and avoid unintended pregnancies may be compromised by circumstances such abusive partners, physical and mental health problems or substance abuse. These situations may be more pronounced or common among women who access abortion services. Most women obtaining abortions, whether for the first or third time, are poor or low-income, and may have difficulties securing necessities such as housing, food, jobs and child care; contraception is likely to fall lower on the list of priorities. Future research will need to examine the extent to which these circumstances are associated with repeat abortion in order increase awareness of the negative impact of these factors, help develop interventions to address these issues and provide a realistic perspective on abilities to improve contraceptive use among women obtaining abortions.

Repeat abortion is one of the less-studied aspects of abortion in the United States. We have identified several potential strategies for reducing repeat abortion, but health care providers and others who work with women who have experienced, or are at risk for, abortion, are better qualified to develop, implement and evaluate these types of recommendations. This report is also intended to initiate broad discussions of the issue. Repeat abortion is a clear indicator of unintended pregnancy and cannot be examined outside this larger context. Thus, while more difficult, we should strive to insure that all women (and men), and not just those obtaining abortions, have improved access to the information and skills they need to avoid becoming pregnant when they do not wish to be.

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Appendix A: Annotated Bibliography of Published Research on Repeat Abortion

This annotated bibliography contains all relevant articles in the PubMed and Academic Search Premiere databases that were found using the search term "repeat abortion". When possible, we provide an abstract summarizing the research findings. The citations are organized according to whether the studies were conducted in the United States and Canada or in other countries.

U.S. and Canadian Studies

Abrams M, Birth control use by teenagers: one and two years postabortion, *Journal of Adolescent Health Care,* 1985, 6(3):196–200.

A prospective study was undertaken of the contraceptive behavior of adolescent women following a first-trimester abortion. Each woman had an individual counseling session, including birth-control counseling. Effective birth control was used by 77% of the 182 respondents one year postabortion. Two years after abortion, 79% of those who remained in the study group continued to use reliable birth control methods. The repeat abortion rate for all respondents was 7% in the first year and 11% in the second year. These results suggest that teenagers who obtain abortions do not rely on the procedure as a method of contraception. Instead, they are more likely to be using reliable methods of birth control postabortion than they were before the unplanned pregnancy.

Aguirre BE, Repeat induced abortion: single, married and divorced women, *Journal of Biosocial Science, 1980,* 12(3):375–386.

Berger C et al., Repeat abortion: is it a problem? *Family Planning Perspectives,* 1984, 16(2):70–75.

As the number of Canadian women who have had induced abortions increases with each succeeding year, the number at risk—and the actual incidence—of repeat abortion also increases. Some researchers have argued that women who have more than one induced abortion are less well adjusted, others that they are less willing to use contraceptives, perhaps because of anxiety about sexuality. Still others have suggested that repeat abortion is unrelated to the psychology or attitudes of individual women, but rather is an inevitable result of imperfect contraceptives, imperfect contraceptive practice and the availability of legal abortion for the termination of unwanted pregnancies. A group of 580 women seeking abortions were interviewed at the Montreal General Hospital and given a number of psychological tests. About one in five of these women were having repeat abortions. The women having repeat abortions were older, less likely to be married and more tolerant of legal abortion than were women having their first abortions. They also had intercourse more frequently than the first-abortion patients. Women obtaining a repeat abortion were slightly more likely to have been using contraceptives at the time they became pregnant, but they did not differ from first-abortion patients in the types of methods that they used. On no other social or demographic characteristics, measures of psychological adjustment or attitudes about sexuality were there any important differences between the groups. A more complex statistical analysis reveals that the two most important factors differentiating first-abortion and repeat-abortion patients are age and coital frequency—both of which are variables that reflect added exposure to the risk of unintended pregnancy.
Bracken MB, Hachamovitch M and Grossman G, Correlates of repeat induced abortions, Obstetrics and Gynecology, 1972, 40(6):816–825.

Bracken MB and Kasl SV, First and repeat abortions: a study of decision-making and delay, *Journal of Biosocial Science,* 1975, 7(4):473–491.

Daily EF et al., Repeat abortions in New York City: 1970–1972, *Family Planning Perspectives,* 1973, 5(2):89–93.

Fisher WA et al., Characteristics of women undergoing repeat induced abortion, *Canadian Medical Association Journal*, 2005, 172(5):637–641.

Although repeat induced abortion is common, data concerning characteristics of women undergoing this procedure are lacking. We conducted this study to identify the characteristics, including history of physical abuse by a male partner and history of sexual abuse, of women who present for repeat induced abortion. We surveyed a consecutive series of women presenting for initial or repeat pregnancy termination to a regional provider of abortion services for a wide geographic area in southwestern Ontario between August 1998 and May 1999. Self-reported demographic characteristics, attitudes and practices regarding contraception, history of relationship violence, history of sexual abuse or coercion, and related variables were assessed as potential correlates of repeat induced abortion. We used chi-square tests for linear trend to examine characteristics of women undergoing a first, second, or third or subsequent abortion. We analyzed significant correlates of repeat abortion using stepwise multivariate multinomial logistic regression to identify factors uniquely associated with repeat abortion. Of the 1221 women approached, 1145 (93.8%) consented to participate. Data regarding first versus repeat abortion were available for 1127 women. A total of 68.2%, 23.1% and 8.7% of the women were seeking a first, second, or third or subsequent abortion respectively. Adjusted odds ratios for undergoing repeat versus a first abortion increased significantly with increased age (second abortion: 1.08, 95% confidence interval [CI] 1.04–1.09; third or subsequent abortion: 1.11, 95% CI 1.07–1.15), oral contraceptive use at the time of conception (second abortion: 2.17, 95% CI 1.52–3.09; third or subsequent abortion: 2.60, 95% CI 1.51–4.46), history of physical abuse by a male partner (second abortion: 2.04, 95% CI 1.39–3.01; third or subsequent abortion: 2.78, 95% CI 1.62–4.79), history of sexual abuse or violence (second abortion: 1.58, 95% CI 1.11–2.25; third or subsequent abortion: 2.53, 95% CI 1.50–4.28), history of sexually transmitted disease (second abortion: 1.50, 95% CI 0.98–2.29; third or subsequent abortion: 2.26, 95% CI 1.28–4.02) and being born outside Canada (second abortion: 1.83, 95% CI 1.19–2.79; third or subsequent abortion: 1.75, 95% CI 0.90–3.41). Among other factors, a history of physical or sexual abuse was associated with repeat induced abortion. Presentation for repeat abortion may be an important indication to screen for a current or past history of relationship violence and sexual abuse.

Franke-Ruta G, Liberal concerns about abortion: multiple choice, *The New Republic*, Nov. 2005.

This article focuses on the increase in second abortions in the United States. "Amy" had two abortions and she began volunteering for Exhale, a telephone hotline that lets women talk about having abortions without worrying about society's stigmas. According to the Guttmacher Institute, close to half of the 1.3 million abortions performed in the United States each year are second abortions. Politicians have yet to address the specific needs of women who have already had abortions since they are focusing on preventing unwanted pregnancies and abortions in the first place.

Freeman EW et al., Emotional distress patterns among women having first or repeat abortions, *Obstetrics and Gynecology*, 1980, 55(5):630–636.

Thirty-five percent of a sample of 413 women undergoing first-trimester abortions were repeating abortions. All patients rated their emotional symptoms on an SCL-90 scale and completed a brief demographic questionnaire. Preabortion and postabortion emotional distress factors and associated demographic characteristics were compared for women having first and those undergoing repeat abortions. Elevated distress levels were similar in both groups prior to abortion procedures, particularly depression, anxiety and somatization. After abortion, repeat aborters continued to have significantly higher emotional distress scores in dimensions relating to interpersonal relationships. The variables that discriminated most between first and repeat abortion groups were number of living children, race and phobic anxiety.

Gillette RD, Repeat abortion and self-reported contraceptive behavior, *American Journal of Public Health*, 1980, 70(6):637.

Gispert M et al., Predictors of repeat pregnancies among low-income adolescents, *Hospital and Community Psychiatry*, 1984, 35(7):719–723.

The authors compared a group of 58 adolescent girls who had been pregnant once during a two-year period with an age-matched group of 58 girls who had become pregnant at least twice during the same period. They found that the girls' attitudes toward contraception did not predict contraceptive use. Regular use of contraceptives was associated with a positive relationship between the girls and their mothers and with the presence of the girls' fathers in the home. The authors suggest that parental support of contraception plays a more im-

portant role in preventing repeat pregnancies than does the adolescents' reported attitudes toward contraception.

Heinrich JF and Bobrowsky RP, The incidence of repeat induced abortion in a randomly selected group of women: a retrospective study, *Journal of Reproductive Medicine,* 1984, 29(4):260–264.

Because of the suspected medical complications resulting from repeat abortions and the uncertainty of data from studies of repeat abortion that rely on patients' reports, we examined the records of 403 women who obtained abortions between 1975 and 1980 at an obstetrics and gynecology clinic within a prepaid-membership health maintenance organization. We found that: (1) 15.9% of the women had had an abortion in the year prior to the abortion for which they were selected for our study, (2) 45.4% of the women had had at least one previous abortion, and (3) 16.9% had had at least two previous abortions. These results are higher than those reported in other studies of repeat abortions and warrant speculation about the relationship of age, marital status and age combined with marital status to abortion history.

Henshaw SK, Observation: contraceptive method use following an abortion, *Family Planning Perspectives,* 1984, 16(2):75–77.

Henshaw SK et al., A portrait of American women who obtain abortions, *Family Planning Perspectives, 1985,* 17(2):90–96.

In 1981, as in 1980, most abortions in the United States were obtained by young women, unmarried women and white women, and were performed in the first eight weeks following the last menstrual period (approximately six weeks after conception). The proportion of abortions obtained by unmarried women has increased slightly, and the fraction obtained by teenagers has decreased, mainly because of shifts in the distribution of these groups in the population. The percentage of abortions that are repeat procedures has increased, representing more than one-third of all abortions. The increase is due largely to the rise in the number of women who have had a first abortion, and who are, therefore, exposed to the risk of having a second procedure. Eighty-five percent of all abortions are performed by vacuum aspiration. Dilatation and evacuation is the method used in two-thirds of abortions performed more than 12 weeks past the last menstrual period, and in nine out of 10 abortions that are performed between the 13th and the 15th week. About three percent of women aged 15–44 obtained abortions in 1981, and 26% of pregnancies were terminated by abortion—the same fractions as in 1980. About six percent of 18–19-year-olds had abortions—the highest rate of any age-group. The abortion rate (the number of abortions per 1,000 women aged 15–44) and ratio (the number of abortions per 100 live births and abortions) are much higher for unmarried than for married women.

Henshaw SK, Characteristics of U.S. women having abortions, 1982–1983, *Family Planning Perspectives,* 1987, 19(1):5–9.

In 1982 and 1983, as in previous years, the majority of abortions in the United States were obtained by young women (62%), white women (70%) and unmarried women (81%). Half of all abortions were performed eight or fewer weeks after the last menstrual period, and 91%t, at 12 weeks or earlier. The proportion of abortions that were repeat procedures continued to rise, to 37% in 1982 and 39% in 1983. The rate of abortion, 29 per 1,000, has remained essentially the same since 1981. Women aged 18–19 continue to have the highest abortion rate of any age-group (60 per 1,000). While most abortions are obtained by white women, the nonwhite abortion rate is more than twice that of whites. Thirty percent of all pregnancies were terminated by abortion in 1983, the same proportion as in 1982 and 1981. The highest abortion ratios are found among unmarried women (63%), women 40 and older (51%), teenagers (42%) and nonwhites (40%). Teenage nonwhites and whites have about the same abortion ratios. After rising during the 1970s, the adolescent pregnancy rate peaked around 1980–1981 and fell slightly in 1982–1983. The relative differentials between the pregnancy, birth and abortion rates of nonwhite and white teenagers narrowed somewhat between 1978 and 1981, but then widened slightly between 1981 and 1983.

Howe B, Kaplan HR and English C, Repeat abortions: blaming the victims, *American Journal of Public Health,* 1979, 69(12):1242–1246.

A study of 1,505 women obtaining abortions in a free-standing abortion clinic in Western New York State revealed that women having repeat abortions were more likely to be using contraception at the time of conception than women having first abortions. However, nearly one-half the non-contracepting repeaters were not contracepting at the time of the repeat pregnancy. Repeaters who were not contracepting at the time of the repeat pregnancy listed medical contraindications or

lack of supplies as the major reasons for not contracepting at the time of the present conception—indicating that they had tried one or more methods since their first abortion. Repeaters were sexually more active than first timers, thus increasing their statistical risk of unwanted pregnancy even as they contracepted more than first timers. The data indicate that both first timers and repeaters overwhelmingly reject the premise that abortion is a primary or even a back-up birth control method. The essential difficulty for repeaters appears to be that they are victims of technological, organizational, and logistical inadequacies as well as statistical probabilities rather than being motivationally deficient or indifferent to the dangers of unprotected sexual intercourse.

Jacoby M et al., Rapid repeat pregnancy and experiences of interpersonal violence among low-income adolescents, *American Journal of Preventive Medicine,* 1999, 16(4):318–321.

Rapid repeat pregnancy (RRP) among adolescents, usually defined as pregnancy onset within 12–24 months of the previous pregnancy outcome, has frequently been the target of public health interventions, due to the exacerbation of negative consequences associated with recurrent adolescent pregnancy (and more specifically with childbearing). The objective of the study was to examine what, if any, relationship exists between RRP and the experience of interpersonal violence and abuse among low-income adolescents at one semi-urban health center. This case-control study used retrospective chart review for 100 women aged 13–21 who received prenatal care at one independent nonprofit health center that serves adolescents and their children from June 1994 through June 1996. Main outcome measures included the number and timing of pregnancies, occurrence of physical or sexual abuse; other psychosocial risk factors were evaluated. In this population, the experience of any form of physical or sexual violence during the study interval was associated with RRP within 12 months ($p=0.01$, OR=3.46) and 18 months ($p=0.013$, OR=4.29). Other previously reported predictors of RRP, including family stress, financial stress, and other environmental stressors did not reach statistical significance at either 12 months or 18 months in this sample. Of additional note, young women who experienced any form of abuse during the 12-month study interval were substantially more likely to miscarry than were their nonabused peers, and spontaneous abortion was also very strongly associated with RRP ($p<0.00001$; OR=22.6). The experience of interpersonal violence is correlated with rapid repeat pregnancy among low-income adolescents. This study strongly suggests a need for both extensive screening for partner and family violence among pregnant and postpartum adolescents, and follow-up safety planning support in combination with family planning interventions.

Jones RK, Darroch JE and Henshaw SK, Patterns in the socioeconomic characteristics of women obtaining abortions in 2000–2001, *Perspectives on Sexual and Reproductive Health,* 2002, 34(5):226–235.

Information about the socioeconomic characteristics of women obtaining abortions in the United States can help policymakers and family planning providers determine which groups of women need better access to contraceptive services. A representative sample of more than 10,000 women obtaining abortions from a stratified probability sample of 100 U.S. providers were surveyed in 2000–2001; survey data are used to examine the demographic characteristics of women who terminate pregnancies. This information, along with other national-level data, is used to estimate abortion rates and ratios for subgroups of women and examine recent changes in these measures. In 2000, 21 out of every 1,000 women of reproductive age had an abortion. Women who are aged 18–29, unmarried, black or Hispanic, or economically disadvantaged-including those on Medicaid-have higher abortion rates. The overall abortion rate decreased by 11% between 1994 and 2000. The decline was greatest for 15–17-year-olds, women in the highest income category, those with college degrees and those with no religious affiliation. Abortion rates for women with incomes below 200% of poverty and for women with Medicaid coverage increased between 1994 and 2000. The rate of decline in abortion among black and Hispanic adolescents was lower than that among white adolescents, and the abortion rate among poor teenagers increased substantially. Increased efforts are needed to help both adolescent women and adult women of all economic statuses avoid unintended pregnancies.

Koenig MA and Zelnik M, Repeat pregnancies among metropolitan-area teenagers: 1971–1979, *Family Planning Perspectives,* 1982, 14(6):341–344.

A declining proportion of young women who become premaritally pregnant marry during their first pregnancy: Thirty-three percent of metropolitan-area women aged 15–19 interviewed in 1971 did so, compared to 16% of those interviewed in 1979. At the same time,

those who do marry have a high probability of conceiving again within 24 months of the outcome of the first pregnancy: Of those surveyed in 1979, almost 50% did so, up from 15% in 1976. While a number of factors may account for the high rate of second pregnancies among married teenagers, it apparently results from less use, or less efficient use, of contraceptives. Among teenagers who experienced a premarital pregnancy and remained single, most age, race and pregnancy subgroups showed either no change in the cumulative risk of a second pregnancy within 24 months or a decline in that risk between 1976 and 1979. The most notable decline was among young women whose first pregnancy ended in abortion; an increasing proportion of premaritally pregnant women, especially those who do not marry, are included in this group. White teenagers show a small increase in the risk of a premarital second pregnancy—an exception to the decline generally noted in second pregnancies among young women who do not marry. The increase parallels rises in the proportions of those who do not use contraceptives and of those who use less effective methods following the premarital first pregnancy. The apparent increase between 1976 and 1979 in the risk of a second pregnancy both among whites who married during the first pregnancy and among those who did not is in contrast to a decrease in risk for those two groups between 1971 and 1976. Although 1979 data are not available for nonmetropolitan-area women, a comparison of second pregnancies in 1971 and 1976 indicates that the decline in risk of a second pregnancy was greater for nonmetropolitan women than for metropolitan women.

Lawson HW et al., Abortion surveillance, United States, 1984–1985, *Morbidity and Mortality Weekly Report Surveillance Summary,* 1989, 38(2):11–45.

Since 1983, the number of legal abortions reported to CDC increased by 5% to 1,333,521 in 1984; in 1985, that number decreased by less than 1% to 1,328,570. The national abortion rate was the same for both years—24 per 1,000 females aged 15–44 years. The abortion ratio for 1984 was 364 legally induced abortions per 1,000 live births; the ratio for 1985 was 354 per 1,000. Abortion ratios were higher among women of black and other minority races and among women younger than 15 years of age. Women undergoing legally induced abortions tended 1) to be young, white, and unmarried, 2) to have had no previous live births, and 3) to be having the procedure for the first time. Curettage was the procedure used in 96% of the reported cases. Eleven deaths were associated with legally induced abortions in 1984, and six in 1985. The case-fatality rate in 1985 was 0.5 deaths per 100,000 legally induced abortions, down from the 0.8 per 100,000 reported in 1983 and 1984. Overall, since 1980, the numbers and rates of abortion have had only slight year-to-year fluctuations. The steady increase in the percentage of repeat abortions since 1972 reflects the ongoing availability of legal abortions. Since the beginning of CDC's abortion mortality surveillance, the number of deaths related to legal abortions has decreased 75%, from 24 deaths in 1972 to six deaths in 1985.

Leach J, The repeat abortion patient, *Family Planning Perspectives,* 1977, 9(1):37–39.

Linares LO et al., Predictors of repeat pregnancy outcome among black and Puerto Rican adolescent mothers, *Journal of Developmental and Behavioral Pediatrics,* 1992, 13(2):89–94.

This prospective study investigated predictors of repeat pregnancies by 12 months after the delivery of a first child and their outcomes in inner-city adolescent mothers. The sample included four groups: those who had therapeutic abortions, miscarriages, full-term deliveries, and no repeat pregnancy. The therapeutic abortion group had more pregnancies before their first delivery (41%) than did full term (20%) and no repeat (15%), p less than .01. More delayed grade placement was found in therapeutic abortion -1.6 years (1.3) and full term -1.8 years (.9) than in no repeat pregnancy -.6 years (1.1), p less .001. Reading achievement scores were higher in no repeat 86.3 (17.1) than in full term 75.0 (16.5), p less than .05. School attendance was higher in no repeat (65%) than in therapeutic abortion (35%) and full-term (24%) p less than .01 groups. Depressive symptoms at baseline were higher among therapeutic aborters 18.9 (9.9) than among full term 10.2 (8.2) and no repeat pregnancy groups 12.2 (6.2). Logistic regression analyses identified delayed grade placement as the most important predictor of pregnancy outcome.

Millar WJ, Wadhera S and Henshaw SK, Repeat abortions in Canada, 1975–1993, *Family Planning Perspectives,* 1997, 29(1):20–24.

In Canada, 20% of women who obtained an abortion between 1975 and 1993 had had at least one previous abortion. An analysis of data on 1.2 million abortions shows that the proportion of abortion patients undergoing repeat procedures increased from 9% to 29% over the 19-year period. The proportion was above av-

erage (22–28% for all years combined) among women who were in common-law marriages, those aged 25–39 and those who had previously had children. In 1993, 27 women per 1,000 who had ever had an abortion underwent another one, while 13 women per 1,000 who had never had an abortion obtained their first one; among teenagers, the repeat rate was four times the rate of first abortions (81 vs. 19 per 1,000). During the study period, the repeat rate rose sharply among women younger than 25 but fell among those aged 30 and older. In 1993, fewer than 2% of abortions were obtained by women who had had three or more previous procedures, suggesting that abortion is not widely used as a primary method of birth control.

Polit DF and Kahn JR, Early subsequent pregnancy among economically disadvantaged teenage mothers, *American Journal of Public Health,* 1986, 76(2):167–171.

This study investigated the antecedents and short-term consequences of an early subsequent pregnancy in a sample of economically disadvantaged teenage mothers. Data were gathered over a two-year period from a sample of 675 young mothers living in eight U.S. cities. Within two years of the initial interview, when half the sample was still pregnant with the index pregnancy, nearly half of the sample experienced a second- or higher-order pregnancy. Characteristics of the young women at entry into the study were relatively poor predictors of which teenagers would conceive again by the final interview. An early repeat pregnancy was associated with a number of negative short-term consequences in the areas of education, employment, and welfare dependency, even after background characteristics were statistically controlled.

Potter RG and Ford K, Repeat abortion, *Demography,* 1976, 13(1):65–82.

A reanalysis of the repeat abortion experience of New York City residents during July 1, 1970 to June 30, 1972 is undertaken on the basis of a probability model that generates repeat abortion ratios as a function of assumptions about fecundity, contraceptive efficiency, and exposure lengths. Tested are three hypotheses put forward by Daily et al. in a 1973 analysis: (i) the low repeat abortion ratio of .0245 is attributable in part to underreporting of registered induced abortions as repeat ones; (ii) a major part of the rise in repeat abortion ratios, from virtually zero to six percent over four consecutive six-month intervals, is explainable in terms of the rising volume of exposure time to risk of repeat abortion relative to the stream of initial abortions; and (iii) the higher abortion ratios of women in their twenties compared to those of older or younger women is ascribable to "differences in fecundity and intercourse frequency." Support is found for the first two hypotheses, and a mixed outcome for the third.

Salter C, Johnston HB and Hengen N, Care for postabortion complications: saving women's lives, *Population Reports,* 1997 Series L, No. 10.

Schneider SM and Thompson DS, Repeat aborters, *American Journal of Obstetrics and Gynecology,* 1976, 126(3):316–320.

In an attempt to learn more about the phenomenon of repeat abortions, 116 women seeking a repeat abortion were compared in various ways with three groups of women not seeking a repeat abortion but otherwise similar. From this study it is apparent that postabortion women become, over time, less persistent users of contraception than sexually active nonpregnant women. However, they are more likely to use contraception continually than are women seeking a first abortion. The abortion experience, with or without concurrent family planning guidance, does not create universally sufficient long-lasting motivation to use of contraception. Some other factors which might contribute to this motivation are presented.

Shepard MJ and Bracken MB, Contraceptive practice and repeat induced abortion: an epidemiological investigation, *Journal of Biosocial Science,* 1979, 11(3):289–302.

Steinhoff PG et al., Women who obtain repeat abortions: a study based on record linkage, *Family Planning Perspectives,* 1979, 11(1):30–38.

The proportion of induced abortions in a year that are repeat procedures rises over time, but this rate is as low as can be expected given the shortcomings of currently available contraceptives. There is no evidence that women substitute abortion for contraception. Teenagers and poor women have greater difficulty avoiding unwanted pregnancies.

Stewart PL, A survey of obstetrician-gynecologists' abortion attitudes and performances, *Medical Care,* 1978, 16(12):1036–1044.

Attitudes toward general and repeat abortion are examined in a probability sample of board certified obstetrician-gynecologists in three Mid-Atlantic states. A

mail-back questionnaire yielded seventy per cent response rate. A typology of abortion attitudes was developed by combining scores on two Guttman scales, one general acceptance and one repeat abortion acceptance scale. This resulted in six types varying from conservative to liberal. Personal and work setting characteristics were examined as correlates of abortion attitude. Personal characteristics are correlated; work setting characteristics are not. Obstetrician-gynecologists; abortion attitudes and performances are related.

Strauss LT et al., Abortion surveillance—United States, 2002, *Morbidity and Mortality Weekly Report Surveillance Summary,* 2005, 54(7):1–31.

For most years since 1969, the CDC has compiled abortion incidence data by state or area of occurrence. During 1973–1997, data were received from or estimated for 52 reporting areas in the United States: 50 states, the District of Columbia, and New York City. In 1998 and 1999, CDC compiled abortion data from 48 reporting areas. Alaska, California, New Hampshire, and Oklahoma did not report, and data for these states were not estimated. For 2000–2002, Oklahoma again reported these data, increasing the number of reporting areas to 49. Many of these data include number of previous abortions obtained by women. Due to incomplete reporting, the CDC's figures for incidence of abortion are consistently lower than those reported by the Guttmacher Institute (see below). Nonetheless, as discussed below, the CDC information on proportions of abortions that were repeat procedures are comparable to those obtained by Guttmacher Abortion Patient Surveys, and we rely on the CDC reports when examining historical trends in repeat abortion.

Tietze C, The 'problem' of repeat abortions, *Family Planning Perspectives,* 1974, 6(3):148–150.

Tietze C and Jain AK, The mathematics of repeat abortion: explaining the increase, *Studies in Family Planning,* 1978, 9(12):294–299.

In any given population, an increase in the proportion of repeat abortions, and a repeat-abortion rate that is substantially higher than the first-abortion rate, can be anticipated to occur over a number of years after abortion has been legalized. These are the findings of an analysis of repeat abortion for a population of women aged 15–44, using simple mathematical models based on the assumptions that the risk of abortion is constant over time and independent of prior abortion experience. The data generated by the models explain both the rapidly increasing percentage and the high rate of repeat abortion following legalization and refute assertions that making abortion widely available discourages the practice of contraception.

Tietze C, Repeat abortions—why more? *Family Planning Perspectives,* 1978, 10(5):286–288.

Tietze C and Bongaarts J, Repeat abortion in the United States: new insights, *Studies in Family Planning,* 1982, 13(12):373–379, 384.

The increasing numbers and proportions of repeat abortions in the United States, including higher order repeat abortions, can be adequately explained by the increasing numbers of women at risk and the heterogeneity of the population in regard to the need for and utilization of abortion services. The same factors, rather than a deterioration of contraceptive practice following abortion, explain the higher levels of repeat abortion rates compared with first abortion rates.

Westfall JM and Kallail KJ, Repeat abortion and use of primary care health services, *Family Planning Perspectives,* 1995, 27(4):162–165.

One-third (34%) of 2,001 women who sought an abortion in 1991–1992 in Wichita, Kansas, were repeat-abortion patients. Compared with first-time abortion patients, repeat-abortion patients were significantly older, more often black, and younger at their first pregnancy ($p<.001$). The two groups did not vary significantly by income or age at first intercourse. However, repeat-abortion patients were significantly more likely than first-time patients to have been using a contraceptive method at the time of conception (65% compared with 59%) and more likely to say they always or almost always used a method (63% and 53%, respectively). More than 40% of women in each group reported they had no personal physician. Further, 34% of repeat-abortion patients said they had no follow-up examination after their previous abortion, and 28% said they received no contraceptive counseling. Only half of women whose pregnancy was confirmed by their personal physician obtained an abortion referral from that physician.

Zelnik M, Second pregnancies to premaritally pregnant teenagers, 1976 and 1971, *Family Planning Perspectives,* 1980, 12(2):69–76.

International Studies

Alouini S et al., Knowledge about contraception in women undergoing repeat voluntary abortions, and means of prevention, *European Journal of Obstetrics, Gynecology, and Reproductive Biology,* 2002, 104(1):43–48.

Despite reliable and effective means of contraception, cases of repeat abortion are on the increase in all developed countries. The aim of this work was to determine whether women undergoing repeat abortions are exposed to risk factors which might be amenable to preventative measures, and the methods employed by carers in these cases. We set out to evaluate practices in the Family Planning Centre of l'Hopital Jean Verdier (Bondy, France) by sending a questionnaire to 147 women who had undergone two abortions up to 1997, and by conducting interviews with the care team. Thirty patients responded to the questionnaire. Twenty-two women (73%) underwent one or more further abortions between 1999 and 2000. Twenty-seven out of 30 women were unaware of the existence of emergency contraception. The 'morning after' pill, indicated for cases of unprotected sex, was unknown to one woman in two (15), nine out of 30 did not know what 'back-up' measures they should take after missing a dose of the contraceptive pill. Psychological problems were found in nine cases. These were followed up with a psychological consultation in three cases. The information given to the patients by the carers was the same irrespective of the number of abortions. Poverty and psychological problems were noted by the carers. Patients who have undergone two abortions might benefit, in addition to their routine visits, from a consultation with a psychologist and a consultation providing information about contraception. Providing the contraceptive pill free of charge to low-income patients is essential.

Batar I et al., Preventing abortion and repeat abortion with the Gynefix intrauterine implant system—preliminary results, *Advances in Contraception,* 1998, 14(2):91–96.

The provision of immediate post-abortal contraception is important to reduce the number of unplanned pregnancies and the number of repeat abortions. Immediate post-abortal insertion of an IUD has many advantages and is an acceptable and safe method. However, side-effects and expulsion of conventional IUDs remain a problem. In an attempt to minimize these problems, the frameless intrauterine implant (IUI) was developed. Clinical studies conducted over the past 12 years have shown the validity of the anchoring concept. The design characteristics of the IUI (fixed, frameless and flexible) are responsible for the low expulsion, high effectiveness and high tolerance rates. This communication is the first report of clinical experience with the post-abortal version of Gynefix (Gynefix PT) in a limited number of women with pregnancies of less than 10 weeks' duration. This experience suggests that immediate post-abortal insertion of Gynefix PT is easy, safe and the implant appears to be as reliable and effective as interval insertion of the interval version. We conclude that the immediate post-abortal insertion of Gynefix PT is an important novel approach to reducing the incidence of repeat abortions.

Bettarini SS and D'Andrea SS, Induced abortion in Italy: levels, trends and characteristics, *Family Planning Perspectives,* 1996, 28(6):267–271 & 277.

Subsequent to the legalization of abortion in Italy in 1978, abortion; rates among Italian women first rose and then declined steadily, from a peak of 16.9 abortions per 1,000 women of reproductive age in 1983 to 9.8 per 1,000 in 1993. Abortion rates vary considerably by geographic region, with rates typically highest in the more secular and modernized regions and lowest in regions where traditional values predominate. Data from 1981 and 1991 indicate that age-specific abortion rates decreased during the 1980s for all age-groups, with the largest declines occurring in regions with the highest levels of abortion. Moreover, a shift in the age distribution of abortion rates occurred during the 1980s, with women aged 30–34 registering the highest abortion rate in 1991, whereas in 1981 the highest level of abortion occurred among those aged 25–29. The abortion rate among adolescent women was low at both times (7.6 per 1,000 in 1981 and 4.6 per 1,000 in 1991). These data are based only on reported legal abortions; the number of clandestine abortions remains unknown

Brewer C and Howard R, Incidence of repeated legal abortion, *BMJ,* 1976, 2(6048):1382.

Callan VJ, Repeat abortion-seeking behaviour in Queensland, Australia: knowledge and use of contraception and reasons for terminating the pregnancy, *Journal of Biosocial Science,* 1983, 15(1):1–8.

Callan VJ, Repeat and first abortion seekers: single women in Brisbane, Australia, *Journal of Biosocial Science,* 1983, 15(2):217–222.

Cheng Y et al., Repeat induced abortions and contraceptive practices among unmarried young women seeking an abortion in China, *International Journal of Gynaecology & Obstetrics,* 2004, 87(2):199–202.

The objective of the study was to determine the rates of repeated abortion and contraceptive use among unmarried young women seeking an abortion in China. We used an anonymous self-administered questionnaire at abortion clinics in Beijing, Changsha, and Dalian from January to September 2000. Of 4547 unmarried young women seeking an abortion, 33.0% reported having had one previous induced abortion. Of those who had had more than one abortion, only 29.7% used a contraceptive method at their first sexual intercourse after the procedure; and of the 446 women who chose contraception, 41.3% used the traditional methods of withdrawal or rhythm. Although 65.0% of the young women had used condoms at least once, only 9.6% did so consistently and correctly; 47.7% of the current pregnancies were associated with nonuse of any contraceptive, and 52.3% were related to contraceptive failure. The rate of unmarried young women seeking repeated abortions was high in China on 2000. The rate of consistent condom use was low, and the rate of contraceptive failure was higher.

David HP, Abortion in Europe, 1920–91: a public health perspective, *Studies in Family Planning,* 1992, 23(1):1–22.

This article grew out of a keynote address prepared for the conference, "From Abortion to Contraception: Public Health Approaches to Reducing Unwanted Pregnancy and Abortion Through Improved Family Planning Services," held in Tbilisi, Georgia, USSR in October 1990. The article reviews the legal, religious, and medical situation of induced abortion in Europe in historical perspective, and considers access to abortion services, attitudes of health professionals, abortion incidence, morbidity and mortality, the new antiprogestins, the characteristics of abortion seekers, late abortions, postabortion psychological reactions, effects of denied abortion, and repeat abortion. Special attention is focused on the changes occurring in Romania, Albania, and the former Soviet Union, plus the effects of the new conservatism elsewhere in the formerly socialist countries of central and eastern Europe, particularly Poland. Abortion is a social reality that can no more be legislated out of existence than the controversy surrounding it can be stilled. No matter how effective family planning services and practices become, there will always be a need for access to safe abortion services.

Garg M, Singh M and Mansour D, Peri-abortion contraceptive care: can we reduce the incidence of repeat abortions? *Journal of Family Planning and Reproductive Health Care,* 2001, 27(2):77–80.

It is of great importance for repeat unwanted pregnancies to be prevented rather than aborted. We therefore sought to: determine the reasons for contraceptive failure in women seeking repeat abortions; audit the peri-abortion contraception services offered at our hospital, and make recommendations regarding peri-abortion contraception services based on the above findings. A self-administered questionnaire was used to determine the contraceptive practices and details of peri-abortion contraceptive counseling received by 50 women undergoing a repeat, and 83 women undergoing a first-time, abortion. Ninety-eight percent of women undergoing a repeat abortion reported using contraception at the time of conception, as compared to 83% of women undergoing a first-time abortion. This difference was significant (p=0.009). Condoms were the main method used by 57% of women undergoing a repeat and 70% of women undergoing a first-time abortion. The oral contraceptive pill (OCP), including both combined oral contraceptive and progestogen-only pill, was the main method used by 37% of women undergoing a repeat and 25% undergoing a first-time abortion. Both these methods were found to be ineffective because of user-dependent failures. All women received peri-abortion contraceptive counseling, but the perceived contents varied. Follow-up contraceptive appointments were made in less than half of women. Although most women chose an optimal contraceptive method as a result of the counseling, compliance with the chosen method in women undergoing repeat abortions was poor. Standards of audit were met with regards to receipt of contraceptive counseling and agreeing a contraceptive method before discharge. The content of this counseling needs to be improved. The ineffectiveness of the OCP and barrier methods of contraception needs to be highlighted during counseling. Adequate follow-up arrangements need to be provided to ensure compliance of the chosen method of contraception.

Hamark B, Uddenberg N and Forssman L, The influence of social class on parity and psychological reactions in women coming for induced abortion, *Acta Obstetricia et Gynecologica Scandinavica,* 1995, 74(4):302–306.

This study tested the hypothesis that the correlation between legal abortion and socioeconomic conditions, known from the time when abortion was restricted, has

current validity, and evaluated the effect of social class on network support and psychological reactions. Consecutive sampling and semistructured personal interviewing was used to study 444 women living in the city of Gothenburg and applying for legal termination of pregnancy in the first trimester at the department of gynecology at a university hospital with primary care responsibility for legal abortions. The 667 health administration districts of Gothenburg were ranked into four groups according to the mean income. Women living in lower socio-economic districts were younger. Irrespective of age, previous experience of induced abortion was more common among them ($p<0.001$). Unsatisfactory network response or support was common (37%), but equally shared between the social classes. Discontinuation of oral contraception during the previous six months was twice as common among teenagers (40.0%) as among other women ($p<0.001$) but without social differences. Pitman's permutation test was used for statistical analyses. Socioeconomic conditions have a strong and inverse correlation to previous experience of induced abortion. Psychological reactions and needs did not vary with class.

Helstrom L et al., Abortion rate and contraceptive practices in immigrant and native women in Sweden, *Scandinavian Journal of Public Health*, 2003, 31(6):405–410.

The aim of this study was to analyze whether immigrant women request induced abortion more frequently than Swedish-born women and, if so, to study possible explanations, including contraceptive practices and attitudes. All women who requested induced abortion during a period of one year were included in the study. The 1289 women, of whom 36% were born outside Sweden, were interviewed by a nurse-midwife who, using a structured protocol, gathered information on socioeconomic factors, reasons for abortion, experience of contraceptive methods, and family planning counseling. The proportion of women with non-Swedish origin in the study population was compared with the official demographic statistics of the corresponding area. The number of women born outside Sweden who requested induced abortion was larger than expected from their proportion in the population. The immigrant women originated from 77 countries and four continents, the largest subgroup, 11%, coming from Iran. Immigrant women had less experience of contraceptive use, more previous pregnancies and more induced abortions than women born in Sweden. In a multivariate analysis, immigrant status and educational level were found to be independent risk factors for repeat abortion. Immigrant status seems to be an independent risk factor for induced abortion. The immigrant women originated from a wide range of cultures. There is no reason to believe that the women in this heterogeneous group should have any cultural factor in common that could explain their higher proneness to seek induced abortion. The most probable cause is that immigrant status is associated more often with low education, weak social network, poverty, unemployment, and being outside common pathways to healthcare.

Holmgren K, Repeat abortion and contraceptive use: report from an interview study in Stockholm, *Gynecologic and Obstetric Investigation*, 1994, 37(4):254–259.

Semistructured interviews were made among a random sample of applicants for abortion in Stockholm, when legal abortion on demand had been available in Sweden for 10 years. One hundred and twenty women were interviewed, 75 of them having their first abortion and 45 having a repeat abortion. The use of contraceptives was similar among first-time aborters and repeat aborters, but 70% in both groups had temporarily been without contraceptives at the time of conception. The interviews show that the family circumstances were more difficult for the women who had already experienced an abortion than for those who had not. The study indicates that the male partner and family circumstances were important for the decision to abort. Thus, family planning programs should reach also men. The main way to prevent repeat abortions seen in this study is to prevent abortions in general, by making contraceptives accepted by and easily obtainable for all groups in society, thus diminishing those times when sexually active men and women temporarily do not use contraceptives.

Johnson BR et al., Reducing unplanned pregnancy and abortion in Zimbabwe through postabortion contraception, *Studies in Family Planning*, 2002, 33(2):195–202.

In many countries, women treated for complications from spontaneous or unsafely induced abortion lack access to contraceptive services. As a result, many of them soon have a subsequent unplanned pregnancy or a repeat abortion, placing their health at increased risk. This report presents the results of a prospective intervention study on postabortion family planning conducted in the two largest public hospitals in Zimbabwe. Women at Harare Central Hospital, in the capital, re-

ceived a postabortion family planning intervention, and Mpilo Central Hospital, in Bulawayo, served as the control site. The study cohort was 982 women, 527 of whom were followed for a 12-month period. During the follow-up period, significantly more women used highly effective methods of contraception, significantly fewer unplanned pregnancies occurred, and fewer repeat abortions were performed at the intervention site than at the control site. These results offer compelling evidence that ward-based contraceptive services provided to women treated for incomplete abortion can significantly reduce subsequent unplanned pregnancies. The results also suggest that postabortion family planning services can reduce the incidence of repeat abortion.

Knudsen LB, Induced abortions in Denmark, *Acta Obstetricia Gynecologica Scandinavica*, 1997, 164(Suppl.):54–59.

A law on Induced Abortion on Request came into force in Denmark in 1973. During the first years the rate of abortion increased but since the early 1980s the rate has been rather constant. The paper reviews recent findings concerning induced abortion and discusses its role in controlling fertility. Trends in induced abortion is described from routine statistics while information on the aborting women are taken both from a survey and from a register based study of fertility- and abortion-pattern among a cohort of women. Fertility trends in Denmark are characterized by an increasing age at first birth. Half of the aborters to day have no children before and 10% had given birth less than 18 months earlier. Among aborters a higher proportion than among parturients were still under education and a higher proportion were single with no steady partner. Half of the aborters became pregnant in spite of contraceptive use, indicating a need for better contraceptives. Induced abortion has become a generally accepted form of birth control in Denmark and the decision to terminate a pregnancy is influenced by many factors including the woman's conjugal—and educational situation. A strategy for prevention of induced abortion must take into consideration the social circumstances of women and for families with children.

Larsson J and Svanberg L, Legal teenage abortions in a Swedish population in the 1970s, *Acta Obstetricia Gynecologica Scandinavica*, 1983, 62(1):5–9.

The number of teenage abortions increased sharply in the early 1970s but gradually decreased from 1975, in absolute numbers as well as in relation to population figures. Teenage abortions now constitute 15% of the total number of abortions. However, the percentage of teenage pregnancies that are terminated by legal abortion is constantly increasing. As the preservation of childbearing function is of paramount importance in teenagers, a low complication rate is essential. Complications occurred in 7% of the cases studies, and the effects of complications of legal abortion on the later obstetric history are discussed. In 14% of the cases a second pregnancy was also terminated artificially. The repeat abortion rate is discussed, with special reference to the contraceptive method used

Lehfeldt H, Immediate postabortion insertion of an IUD, *European Journal of Obstetrics, Gynecology, and Reproductive Biology*, 1984, 17(2–3):141–147.

Conception may occur as early as 10 days postabortion. Therefore, immediate postabortum insertion (IPI) of an IUD reduces the danger of exposure to an unwanted pregnancy in the interval and offers better protection against repeat abortion than delayed insertion. Patient motivation to use contraception appears to be highest at the time of termination of an unwanted pregnancy. Complication and pregnancy rates of IPI are comparable with postmenstrual insertion. No serious complications are on record in the world literature; particularly, no cases of infection or perforation have been reported. These facts make IPI not only an acceptable but a highly advisable technique of family planning. In 1977, the American Food and Drug Administration rescinded its earlier prohibition and approved the IPI method. Nulliparous women should be inserted with a copper device, parous women with a Lippes loop.

Nguyen TM et al., Characteristics of repeat aborters in Vietnam, *Southeast Asian Journal of Tropical Medicine and Public Health*, 2000, 31(1):167–172.

Two hundred and sixty married women seeking induced abortion service in Hanoi, Vietnam were interviewed to determine the magnitude of repeat induced abortion and explore selected characteristics of the repeat aborters. Seventy-one percent of the sample reported having had at least one previous induced abortion. After adjustment for age and number of living children, poor attitudes toward contraception, low use of modern contraceptives and failure of contraception were shown to be significantly associated with repeat induced abortion. Woman's age, number of living children, contraceptive knowledge and experience and desire for no more children were positively related to re-

peat induced abortion. Social and demographic characteristics were not related to repeat induced abortion. Improvement of attitudes toward contraception, persuasion to use modern contraception and promotion of contraceptive effectiveness are recommended strategies to prevent repeat induced abortion.

Osler M et al., Repeat abortion in Denmark, *Danish Medical Bulletin,* 1992, 39(1):89–91.

A study of 50 women undergoing first-time induced abortion and 50 women undergoing second-time induced abortion is reported. Although repeat aborters can not be characterised as a special group of women, it is important that initiatives be taken to reduce the incidence of repeat induced abortion. A suggestion for possible intervention is a thorough post-abortion contraceptive counselling and follow up of women who undergo initial induced abortion. Further general improvement in sex education and use of contraceptive methods is necessary. In this area, avoidance of risk-taking is very important as well as caution during periods of change from one contraceptive method to another. Generally, use of contraceptive methods with a very high effectiveness must be recommended, i.e. oral contraceptives, IUDs and sterilization.

Osler M, David HP and Morgall JM, Multiple induced abortions: Danish experience, *Patient Education and Counseling,* 1997, 31(1):83–89.

Experience with 50 first-time aborters, 50 second-time aborters, and 50 third-time aborters residing in an urban area of Copenhagen suggests that women having a repeat abortion are more similar than dissimilar to women having a first induced abortion. There were no differences in socioeconomic status, educational level, or stated reasons for choosing abortion (usually socioeconomic and family considerations). Though similar to first- and second-time aborters in their life situations and greater contraceptive risk-taking, third-timers seemed to become pregnant more readily. They were also less willing to be interviewed. Related studies and suggestions for postabortion counseling are discussed.

Pakter J, Nelson F and Svigir M, Legal abortion: a half-decade of experience, *Family Planning Perspectives,* 1975, 7(6):248–255.

Pandey DN et al., Contraceptive coverage after medical termination of pregnancy, *Indian Journal of Hospital Pharmacy,* 1989, 26(5):154–157.

Savelieva I et al., Postabortion family planning operations research study in Perm, Russia, FRONTIERS *Final Report,* Washington, DC: Population Council, 2003.

Schunmann C and Glasier A, Specialist contraceptive counselling and provision after termination of pregnancy improves uptake of long-acting methods but does not prevent repeat abortion: a randomized trial, *Human Reproduction,* 2006, 21(9):2296–2303.

One in four abortions in the UK is undertaken for women who have had one before. Women undergoing abortion in Edinburgh were targeted for improved contraceptive advice and provision in this randomized trial. Between November 2001 and May 2002, women recruited at assessment for abortion were randomized at admission to receive specialist contraceptive advice and enhanced provision (316 women) or standard care (297 women). Randomization was based on the week of admission. Contraceptive use 16 weeks after abortion was assessed by questionnaire and subsequent abortions by review of the hospital records two years later. Women receiving specialist advice and enhanced provision were more likely to leave the hospital with contraception (271 vs. 115, $p<0.001$), which was more likely to be a long-acting method (141 vs. 78, $p<0.001$) than women receiving standard care. Four months later, there was no significant difference in contraceptive prevalence or continuation, but women in the intervention group were more likely to be using contraceptive implants (32 vs. 6, $P < 0.001$). Two years later, 14.6% of women in the intervention group (44/302) and 10% of controls (27/268) had undergone another abortion in the same hospital ($p=0.267$). Specialist contraceptive advice and enhanced provision had a short-lived effect on contraceptive uptake and increased the use of long-acting methods but did not appear to reduce repeat abortions.

Singh K, Fong YF and Loh SY, Profile of women presenting for abortions in Singapore at the National University Hospital, *Contraception,* 2002, 66(1):41–46.

The study was conducted to profile women seeking abortions at the National University Hospital, with particular interest in the trend of teenage pregnancies with the aim of identifying risk factors for late presentation for abortions. All patients who underwent an abortion at our center from January 1, 1996 to December 31, 2000 were recruited. Data were entered into a prepared questionnaire during the mandatory pre-abortion coun-

seling sessions and completed at the 6-week post-abortion follow-up. This was then keyed into a database (SPSS Version 10), and the results were analyzed. Multivariate analysis was used in identifying risk factors associated with late presentation for abortions. Chi-square analysis of variables was used where relevant. A total of 1370 women presented for induced abortions during the period of study. The mean age of women was 29.6 years. Most women were either homemakers (35.3%) or semi-skilled workers (28.5%) with at least a secondary school education (58.3%). The majority were married (75.5%). There was a significant trend in the proportion of single women seeking abortions, from 18.3% in 1996 to 27.8% in 2000 ($p<0.05$). At the same time, the proportion of women presenting for repeat abortions also increased from 13.8% in 1996 to 33.2% in 2000 ($p<0.05$). Teenage abortions made up 117 (8.5%) of the study group, of which 95% were single women. Significant proportions (52.1%) were students at the time of abortion. In contrast to women above 20 years of age, pregnant teenagers were more likely not to have used any contraception (67.1% vs. 37.3%) and more likely to present late for abortion (18.8% vs. 10.4%). Teenage pregnancies are a major risk factor for late presentation for abortions. This emphasizes the need for availability and easy access to early abortion counseling, and the need for sex education with use of contraception starting in schools, to reduce abortions among teenagers.

Skjeldestad FE and Bakketeig LS, Induced abortion: trends in the tendency to repeat, Norway, 1972–1981, *Scandinavian Journal of Social Medicine,* 1986, 14(4):205–209.

Through the 1970s the number of women who experienced an induced abortion increased in Norway. Thus, the population at risk for a repeat abortion has increased. The frequency of repeat abortions has doubled from 1972 to 1981. However, the annual frequency of observed repeat abortion has been below what could be expected according to contraceptive failure rates. There is no evidence that the liberalized abortion legislation has led to the use of induced abortion as a method of birth control. In order to improve fertility surveillance and to elucidate the epidemiology of induced abortion, there is a need for more detailed and individually based national registration of induced abortions as well as spontaneous abortions.

Skjeldestad FE, The incidence of repeat induced abortion—a prospective cohort study, *Acta Obstetricia Gynecologica Scandinavica,* 1994, 73(9):706–710.

The objective of the study was to measure the cumulative incidence of first and second repeat induced abortion and what differentiates first-time repeaters from non-repeaters. The study population comprised 2,925 women who had their first induced abortion at the University Hospital of Trondheim, Norway between January 1, 1987 and December 31, 1991. Repeat induced abortion within the study period was measured as a cumulative incidence of second and third induced abortion. Survival analyses and logistic regression analysis were applied using 'repeater' as the dependent variable. The cumulative incidence of second induced abortion was 3.7% at end of first year, 7.1% at end of second year, 9.9% at the end of third year, and 12.3% at four completed years of observation. The cumulative incidence of third induced abortion was 0.1% at the end of first year, 0.6% at the end of second, 1.3% at the end of third and 2.0% at four years of observation. The cumulative incidence of the third abortion, measured as the time at risk from the second to the third abortion, remained twice that of the cumulative incidence of the second abortion after one year of observation ($p<0.001$). At the first abortion, variables predicting a risk for repeat induced abortion were age, occupational status and becoming pregnant as a result of a contraceptive failure. Repeat induced abortion is inevitable. The incidence of repeat induced abortions doubled from the second to the third abortion, indicating that the moral threshold for choosing an abortion after recognition of an unplanned pregnancy is the first induced abortion. More detailed studies on the effect of intensified contraceptive counseling programs after the first abortion are needed.

Somers RL, Repeat abortion in Denmark: an analysis based on national record linkage, *Studies in Family Planning,* 1977, 8(6):142–147.

The abortion registration system maintained by the Danish government permits an analysis of abortion incidence by individual. Using computer techniques to sort all the abortion records for the 15-month period from October 1973, when the abortion law was liberalized, through December 1974, it has been possible to determine the rate of repeat abortion and some demographic variables associated with it. Of the women who experienced induced abortion in the period under study, 2.92 percent had more than one abortion. Repeat abortion was found to be more frequent among women aged 20–34 and among women with a greater number

of pregnancies, live births, and induced abortions prior to the change in law. A higher rate of repeat abortion was observed in urban areas. The overall rate of repeat abortion is consistent with a high level of contraceptive effectiveness.

St John H, Critchley H and Glasier A, Can we identify women at risk of more than one termination of pregnancy? *Contraception,* 2005, 71(1):31–34.

One in five women will have more than one abortion in her lifetime. This study was designed to identify risk factors in women requesting termination of pregnancy (TOP) after previous TOPs so that women at risk of recurrence, attending for the first time, could be identified. A retrospective case note review of 358 women undergoing TOP during October and November 2000 was performed. Twenty-six percent of women had had a previous TOP. Women undergoing a second or subsequent therapeutic abortion were more likely to be older and have experienced more pregnancies to full term, but these two factors were confounded. When women were both parous and deprived, the risk of them having had more than one TOP was over 50%.

Tewari SK et al., Understanding factors influencing request for a repeat termination of pregnancy, *Health Bulletin (Edinburgh),* 2001, 59(3):193–197.

The objective was to assess factors influencing request for a termination of pregnancy (TOP). A questionnaire-based, prospective study of 150 women requesting a TOP was used. This questionnaire contained a modified version of the Edinburgh Postnatal Depression Scale (EPDS). Of the 150 women requesting a TOP, 100 were seeking a TOP for the first time and the remaining 50 had at least one TOP in the past. Forty-five percent of women requesting termination of the first pregnancy were under the age of 20, 62% earned less than 10,000 Pounds per year and 12% did not use any form of contraception. Ninety-eight percent knew about emergency contraception but only 3% used it. The repeat termination group were older (only 24% under the age of 20). Fifty-five percent earned less than 10,000 Pounds per year, 15% did not use any contraception, 92% knew about emergency contraception but only 10% used it. Both groups were highly satisfied with the counseling, explanation about the procedure and future contraception advice. However, about 60% of women in both groups had suffered from mild to moderate depression as a consequence of termination. This study confirms the need for easy availability of emergency contraception and emphasizes the importance of education about contraception in general.

Tornbom M et al., Repeat abortion: a comparative study, *Journal of Psychosomatic Obstetrics and Gynaecology,* 1996, 17(4):208–214.

In a study of 404 women (simple random sample) 20–29 years of age, 201 women (group A) applying for abortion and 203 women (group B) continuing their pregnancies were given a questionnaire and were also interviewed. The aim of the study was to describe women applying for repeat abortion and to compare them with women having their first abortion and with women continuing their pregnancies. Variables measured were socio-economic, psychological and social problems, relationship with the partner, earlier pregnancies, how the present pregnancy was experienced and decision-making. For presentation of the results, the data have been divided into four subgroups: pregnant women applying for their first abortion (A1, n=137), women applying for repeat abortion (A2, n=64), women continuing their pregnancies who have never applied for abortion (B1, n=142), and women continuing their pregnancies who had previously applied for one or more abortions (B2, n=58). Women who had had previous abortion/abortions had experienced more psychological problems during their lifetime than the other groups studied. They had more contact with the social welfare service and evaluated their relationship with the partner as less harmonious than women having a first abortion, also in comparison with women continuing their pregnancies with no earlier applications for abortion. Women who have had previous abortion/abortions seem to have a need for special attention. This involves not only being provided with efficient and acceptable contraception, but also with social and psychological support based on the experiences of the women.

Tornbom M and Moller A, Repeat abortion: a qualitative study, *Journal of Psychosomatic Obstetrics and Gynaecology*, 1999, 20(1):21–30.

In a qualitative study of 20 women seeking a repeat abortion, interviews lasting for 1.5–2 hours were conducted after the first appointment with a gynecologist when the abortion was planned. The women were aged 20–29 years and had experienced one to five abortion(s) during the previous 5 years. The aim of the study was to attain understanding of the phenomenon of repeat abortion. The women were asked to express their thoughts related to their situation and their choices. The following categories were found: psychosocial

background factors, reactions to previous abortion(s), reflections on fertility, sexuality, psychological factors, social factors, contraceptive use, the present pregnancy, motives for the planned abortion, feelings about the planned abortion and risk-taking process. Most of the women seemed to have a psychological vulnerability with many current and previous problems, as well as problems regarding sexuality. It was evident that insecurity was present in the use of contraceptives and in relation to sexual activities and to sexual partners. The main reason for an unplanned pregnancy is not a lack of information or even a lack of knowledge, but rather a failure to integrate the knowledge with situational, intrapsychic and social factors.

Tornbom M et al., Decision-making about unwanted pregnancy, *Acta Obstetrica Gynecologica Scandinavica*, 1999, 78(7):636–641.

The aim of the study was to focus on aspects of the decision-making process among women having first and repeat abortion, in comparison with women continuing their pregnancies with or without having experienced abortions. In a study of 401 pregnant women, (simple random sample) 20–29 years of age, 137 having first abortion (A1), 64 repeat abortion (A2), 142 continuing their pregnancies with no experience of abortion (B1) and 58 continuing, having experienced abortion(s) (B2), were given a questionnaire and were interviewed. The pregnancy evoked ambivalent feelings in all groups. One-third of the women in the A-groups and about 25% of those in the B-groups had ambivalent feelings. More than half of the women decided to have an abortion upon first finding out they were pregnant, and after a few weeks of thought most of them had decided to have the abortion. More than half of the women having an abortion said it was rather or very difficult to make a decision. Among these subjects, women having had contact with social services found it significantly harder to make this decision. A majority agreed with their partners on having an abortion. A majority did not feel influenced by someone else when deciding about the abortion. However, 10% in the A1-group and 6% in the A2-group felt much or comparatively much influenced by someone else. Counseling seems to be important among a considerable number of women finding it hard to make a decision about abortion. Special attention is required for women feeling influenced by someone else and/or having pronounced social problems.

Tsoi WF, Ratnam SS and Tay GE, Psychosocial aspects of repeat abortions in Singapore—a preliminary report, *Singapore Medical Journal*, 1984, 25(2):116–121.

Tsoi WF, Tay GE and Ratnam SS, Psychosocial characteristics of repeat aborters in Singapore, *Biology and Society*, 1987, 4(2):78–84.

The psychosocial characteristics of 200 repeat aborters and 200 first time aborters among Singapore Chinese were compared with 200 antenatal patients. The repeat aborters started their sexual activities at an earlier age. They were married for a longer period, had more past pregnencies and more children, but their marital adjustments were slightly less satisfactory. There were no differences in education, housing and religious practices among the three groups. The aborters knew more methods of contraceptive practices, but they tended to use unreliable methods. Their main reasons for seeking abortion were that their families were complete or that they wished to space births.

Appendix B: Detailed Tables

Appendix B1. Percentage distribution of all sexually active women aged 15–44 and all women at risk of pregnancy, by social and demographic characteristics, 2002 NSFG; and percentage distribution of women having abortions, by social and demographic characteristics, according to number of abortions, 2000–2001 APS

	2002 NSFG		2000–2001 APS				
					Multiple abortions		
Characteristic	Women 15–44 (N=7643)	Women at risk of unintended pregnancy† (N=3714)	Total (N=10683)	1st abortion (N=5548)	2nd or higher-order abortion (N=5135)	2nd abortion (N=3111)	3rd or higher-order (N=2024)
Age							
<20	16.0	13.1	19.1	29.4	8.1	4.3	3.1
20–24	16.0	22.6	33.0	34.5	31.5	31.3	21.7
25–29	15.0	20.1	23.1	18.4	28.2	29.0	34.4
30–34	16.7	18.1	13.5	9.8	17.6	19.8	21.1
35+	36.3	26.1	11.2	7.9	14.7	15.7	19.7
Number of prior births							
0	41.6	45.5	39.1	52.7	24.5	20.4	15.5
1	18.2	23.0	27.4	23.6	31.4	31.9	28.0
2	21.8	19.5	20.3	15.5	25.5	27.6	28.2
3+	18.3	12.0	13.2	8.1	18.6	20.2	28.3
Race/ethnicity							
White non-Hispanic	65.7	67.4	40.9	45.6	35.9	30.7	27.1
Black non-Hispanic	13.9	13.0	31.7	26.2	37.7	40.0	46.4
Other non-Hispanic	5.6	5.6	7.3	8.0	6.5	7.5	6.5
Hispanic	14.8	13.9	20.1	20.3	19.8	21.8	19.9
Education‡							
Less than high school	11.6	9.2	12.2	10.5	13.3	14.3	15.6
High school degree	30.4	27.3	28.2	25.1	30.2	28.8	33.5
Some college/associates degree	29.3	29.8	38.0	35.7	39.4	42.5	39.1
College degree	28.7	33.7	21.6	28.7	17.0	14.3	11.7
Union status							
Married	46.0	45.3	17.0	15.3	18.9	20.6	18.2
Cohabiting	9.0	11.6	25.4	22.0	29.2	29.0	33.4
Previously married	9.9	7.4	10.9	9.9	11.9	11.5	12.0
Never married	35.0	35.6	46.6	52.7	40.0	38.9	36.4
Poverty level							
<100%	19.1	17.1	26.6	25.8	27.4	27.9	31.6
100–199%	20.9	19.3	30.8	30.4	31.2	30.5	31.8
200% or more	60.0	63.6	42.6	43.7	41.4	41.6	36.6
Medicaid coverage							
Yes	10.3	8.9	24.2	22.5	26.1	27.5	34.3
No	89.7	91.1	75.8	77.5	73.9	72.5	65.7
Current contraceptive use							
Tubal or vasectomy	32.3	na	0.0	0.1	0.0	0.0	0.0
Reversible long-acting§	2.2	3.2	0.1	0.1	0.2	0.2	0.1
Pill, patch or injectable	32.8	48.4	14.5	13.4	15.7	16.0	12.4
Barrier	16.6	24.6	29.4	30.8	27.9	26.0	25.6
Other	5.4	7.9	9.6	9.8	9.3	9.7	10.0
None	10.7	15.8	46.3	45.8	46.8	48.0	51.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

†Excludes women who had not had intercourse in the past three months; those who were pregnant, seeking pregnancy, postpartum or contraceptively sterilized; and those who were sterile or had a partner who was sterile. ‡Includes women aged 25 and older. §Includes the IUD and contraceptive implants (e.g., norplant).

Appendix B2. Percentage distribution of women having abortions, by social and demographic characteristics, accoding to age and number of abortions, 2000–2001 APS

Characteristic	Younger than 20			20–29			30 and older			Total
	1 (N=1629)	2 (N=340)	3+ (N=78)	1 (N=2952)	2 (N=1876)	3+ (N=1191)	1 (N=967)	2 (N=895)	3+ (N=755)	
Total	80	17	4	49	31	20	37	34	29	100
Age										
<20	90†	8†	2†	na	na	na	na	na	na	100
20–24	73 ‡	22 ‡	5 ‡	54	30	16	na	na	na	100
25–29	na	na	na	41	33	26	na	na	na	100
30–34	na	na	na	na	na	na	37	34	29	100
35+	na	na	na	na	na	na	37	34	30	100
Number of prior births										
0	85	13	2	63	26	12	51	28	21	100
1	62	30	8	44	34	22	37	36	27	100
2	60	31	9	41	34	25	37	35	29	100
3+	--	--	--	34	34	32	30	34	35	100
Race/ethnicity										
White non-Hispanic	85	13	2	56	31	14	43	35	22	100
Black non-Hispanic	75	19	6	38	35	27	27	34	39	100
Other non-Hispanic	78	17	5	57	26	17	42	26	32	100
Hispanic	77	19	4	50	28	21	36	33	31	100
Education										
Less than high school	na	na	na	46	28	26	32	35	34	100
High school degree	na	na	na	46	33	21	34	35	32	100
Some college/associates degree	na	na	na	48	32	20	36	34	32	100
College degree	na	na	na	61	27	12	48	32	19	100
Union status										
Married	64	30	7	51	31	19	41	32	27	100
Cohabiting	69	27	4	44	33	23	33	32	35	100
Previously married	81	14	5	50	31	19	42	35	23	100
Never married	83	14	4	51	30	19	30	36	33	100
Poverty level										
<100%	78	17	4	46	31	23	31	35	34	100
100–199%	80	16	4	49	32	20	32	36	32	100
200% or more	81	16	3	50	31	18	43	32	25	100
Medicaid coverage										
Yes	78	17	5	42	31	28	26	35	39	100
No	80	17	3	51	31	18	40	33	27	100
Current contraceptive use										
IUD or implant	--	--	--	45	36	18	--	--	--	
Pill or injectable	69	27	4	46	33	21	38	36	25	100
Barrier	86	12	2	50	32	18	38	37	25	100
Other	83	15	3	54	28	18	38	31	31	100
None	78	18	5	46	32	22	36	32	32	100

Note: "--" indicates row total has fewer than 10 cases.

†Includes adolescents under age 18; ‡Includes adolescents aged 18 and 19.

Appendix B3. Odds ratios of social and demographic characteristics predicting whether women having abortions have had one or more prior abortions, according to women's age and prior births, 2000–2001 APS

Characteristic	All (N=10683)	Among women <20 (N=2047)	Among women 20–29 (N=6019)	Among women 30+ (N=2617)	Among women with 1+ births (N=6517)
Age†					
<20	1.00	1.00	--	--	1.00
20–24	2.57 ***	2.24	1.00	--	1.94 ***
25–29	4.14 ***	3.09 **	1.60 ***	--	3.35 ***
30–34	4.96 ***	4.83 **	--	1.00	4.03 ***
35+	5.42 ***	6.17 ***	--	1.11	4.14 ***
Number of prior births					
0	1.00	1.00	1.00	1.00	na
1	2.04 ***	2.37 ***	1.90 ***	1.74 **	1.00
2	2.13 ***	2.33 **	2.04 ***	1.88 ***	1.07
3+	2.62 ***	1.57	2.60 ***	2.20 ***	1.30 **
Race/ethnicity					
White non-Hispanic	1.00	1.00	1.00	1.00	1.00
Black non-Hispanic	1.70 ***	2.18 ***	1.73 ***	1.59 ***	1.88 ***
Other, non-Hispanic	1.12	1.73 *	1.05	1.08	1.28
Hispanic	1.21	1.70 **	1.14	1.07	1.29 *
Poverty level					
<100%	0.89	0.79	0.79 **	1.03	0.87
100–199%	0.92	0.82	0.85 *	1.15	0.98
200% or more	1.00	1.00	1.00	1.00	1.00
Medicaid coverage	1.18 **	0.96	1.19 **	1.42 *	1.24 **
Education					
Less than high school	1.24	0.98	1.47 **	1.45 *	1.36 *
High school degree	1.48 ***	1.03	1.49 ***	1.38 *	1.45 ***
Some college/associates degree	1.52 ***	1.00	1.55 ***	1.43 **	1.46 ***
College degree	1.00	2.66	1.00	1.00	1.00
Union status					
Married	1.00	1.00	1.00	1.00	1.00
Cohabiting	1.63 ***	1.16	1.56 ***	1.44 **	1.69 ***
Prev married	0.96	0.47	1.00	0.97	0.95
Never married	1.32 **	0.72	1.27 **	1.72 ***	1.38 ***
Current contraceptive use					
Long-acting‡	0.52	na	0.80	0.31	0.60
Pill or injectable	1.21 *	2.48 ***	1.13	0.93	1.10
Barrier	1.00	1.00	1.00	1.00	1.00
Other	0.98	1.19	0.88	1.07	1.10
None	1.05	1.57 **	0.96	1.02	1.09

*p<.05; **p<.01; ***p<.001

† For the model restricted to women younger than age 20, age categories refer to single years of age: <16 (the comparison group), 16, 17, 18 and 19; ‡Includes IUD, contraceptive sterilization and norplant.

Appendix B4. Logistic regression coefficients predicting contraceptive use, by prior abortions and social and demographic characteristics, according to contraceptive use, 2000–2001 APS

	All	Pill or injectable user			Barrier method user†		
	User vs. nonuser (N=10683)	vs. nonusers and all other users (N=10683)	vs. nonusers (N=6498)	vs. all other method users (N=5726)	vs. nonusers and all other users (N=10683)	vs. nonusers (N=8089)	vs. all other method users (N=5726)
1st abortion	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2nd abortion	1.1	1.2 **	1.2 **	1.2 *	1.0	1.0	0.9
3rd abortion	0.9	1.1	1.1	1.3 *	0.9 *	0.9 *	0.8
Age							
<20	1.0	1.0	1.0	1.0	1.0	1.0	1.0
20–24	1.0	1.2	1.2	1.2 *	0.9	0.9	0.9
25–29	1.0	1.0	1.0	1.0	0.9	1.0	0.8
30–34	1.0	0.9	1.0	0.9	1.0	1.0	0.9
35+	1.1	0.6 ***	0.6 *	0.5 ***	1.1	1.1	1.1
Number of prior births							
0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1	0.9 **	1.2	1.0	1.4 **	0.9 *	0.8 **	0.9
2	1.0	1.3 *	1.2	1.4 **	0.9	0.9	0.9
3+	0.9	1.4 **	1.3 *	1.7 ***	0.8 *	0.8 *	0.8 *
Race/ethnicity							
White non-Hispanic	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Black non-Hispanic	0.6 ***	0.6 ***	0.5 ***	0.8 **	0.8 **	0.7 ***	1.3 **
Other non-Hispanic	0.6 ***	0.5 ***	0.4 ***	0.6 **	0.8 *	0.7 ***	1.2
Hispanic	0.7 ***	0.8 *	0.7 ***	1.0	0.7 ***	0.6 ***	0.8 *
Education							
Less than high school	0.6 ***	0.6 **	0.5 ***	0.8	0.8 *	0.6 ***	1.3
High school degree	0.6 ***	0.7 *	0.6 ***	0.9	0.8 ***	0.6 ***	1.1
Some college/associates deg	0.9	1.0	0.9	1.0	1.0	0.9	1.1
College degree	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Union status							
Married	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cohabiting	1.0	1.3 *	1.2	1.3 **	0.9	0.9	0.9
Prev married	0.8 *	1.0	0.9	1.1	1.0	0.9	1.3 *
Never married	1.0	1.0	1.0	1.0	1.1	1.1	1.3 *
Poverty level							
<100%	1.0	1.0	1.0	1.0	1.0	1.0	1.0
100–199%	1.0	0.9	1.0	0.9	1.0	1.0	1.1
200% or more	1.0	1.0	0.9	1.0	1.0	1.0	1.0
Medicaid coverage	0.9	1.0	1.1	1.0	1.0	1.0	1.1
Weeks gestation							
≤6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
7–11	0.9 *	1.1 *	1.1	1.2 ***	0.9 **	0.9 ***	0.9
≥12	0.8 **	1.5 ***	1.2	1.9 ***	0.7 ***	0.7 ***	0.7 ***

*p<.05; **p<.01; ***p<.001

†Includes male and female condom, diaphragm, jelly, cream, film, sponge, foam and suppositories.