

Data Needs for Measuring Family and Fertility Change After Welfare Reform

*Edited by
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Contents

	Page
Preface	v
Introduction	vi
<i>Douglas J. Besharov</i>	
	1
1: The National Survey of Family Growth	
<i>William D. Mosher and Joyce C. Abma</i>	
2: Vital Statistics Data from the National Center for Health Statistics	21
<i>Stephanie J. Ventura</i>	
3: Birth and Abortion Data	41
<i>Stanley K. Henshaw</i>	

Preface

Data Needs for Measuring Family and Fertility Change After Welfare Reform is one of a series of reports from the Committee to Review Welfare Reform Research, a project of the Welfare Reform Academy. The committee was formed to help the public, other scholars, practitioners, and policymakers understand research on welfare reform and apply its lessons. Its purpose is to assess the quality and relevance of the most significant evaluation studies, identifying those findings that are sufficiently well-grounded to be regarded as credible. The committee members are experts in evaluation and related social science fields.

The 1996 welfare reform act, the Personal Responsibility and Work Opportunity Reconciliation Act (PROWRA), establishes family goals that include discouraging out-of-wedlock births while encouraging marriage and two-parent families. The act also gives states flexibility in designing programs to reach these goals. To evaluate welfare reform's impact on families, however, requires better data than is currently available at both national and state levels on births, marriage, divorce, abortion, family formation, and the living arrangements of children. The three papers in this monograph examine the strengths and weaknesses of some key data sources and suggest ways to improve them. William D. Mosher and Joyce C. Abma discuss possible contributions of the National Survey of Family Growth to welfare reform evaluation. Stephanie Ventura describes birth data and explains its uses in assessing welfare reform. Stanley K. Henshaw discusses the adequacy of abortion data, which are needed to measure states' performance on PROWRA's goal of reducing nonmarital childbearing without increasing abortion. Future publications from the Welfare Reform Academy will examine the strengths and limitations of Census Bureau data and other statistical sources not covered here, discuss the application of these data to performance bonuses, and make a general assessment of family and fertility change after welfare reform.

We sincerely hope that the materials in this report aid in assessing research on family and fertility change after welfare reform.

—DOUGLAS J. BESHAROV

Introduction

*Douglas J. Besharov**

Among other goals, the 1996 welfare reform law—the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA)—seeks to “encourage the formation and maintenance of two-parent families” by encouraging marriage and discouraging out-of-wedlock childbearing and teenage pregnancies. The law gives states considerable freedom to design programs and establishes incentives to work towards its goals. For example, PRWORA provides \$100 million in bonuses per year for the five states most successful in reducing out-of-wedlock childbearing while not increasing abortion (the “illegitimacy bonus”). The act also sets aside a total of \$200 million per year (the “high performance bonus”) for states that make progress towards a broad set of work- and family-related outcomes.

Welfare reform’s goal of strengthening families enjoys widespread support, and many expect additional provisions on this subject in the law’s reauthorization in 2002. Evaluating welfare reform’s impact on families, however, requires better data than is currently available—on births, marriage, divorce, abortion, family formation, the living arrangements of children, and related trends. The papers in this monograph describe available data, identify their strengths and weaknesses, and suggest needed improvements.

In the first essay, statisticians William D. Mosher and Joyce C. Abma of the National Center for Health Statistics (NCHS) describe the National Survey of Family Growth (NSFG) and explore its potential as a tool to assess welfare reform. The NSFG, an extensive nationwide survey of women ages 15 to 44, provides reliable national estimates of births, pregnancies, living arrangements, and related behaviors. Interviewers obtain a complete history of each woman's pregnancies, marriages, periods of cohabitation, contraceptive use, work, education, early sexual experiences, and childhood living arrangements—as well as demographic information and data on sources of income, including welfare. In addition, researchers can link individual cases to Census tracts to analyze the data by neighborhood characteristics. The last NSFG was conducted in 1995, on the eve of welfare reform; the next occurs in 2001, five years after its enactment. This timing makes the survey especially useful in assessing welfare reform nationally. Its limited sample size, however, precludes making comparisons among state programs. The next NSFG includes a representative sample of men as well as women.

Mosher and Abma describe several options for making the survey more useful in monitoring family and fertility-related trends. Oversampling could boost the reliability of estimates for racial and ethnic groups, regions, or even permit analysis of behaviors in some large states. More frequent fielding of the survey would make it possible for researchers to follow trends more closely. The authors also suggest including military personnel, instituting a follow-

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up survey on contraceptive use and unintended pregnancy, collecting biomarkers to test for sexually transmitted diseases and other conditions, and adding a sample of people in prison.

In the next essay, Stephanie J. Ventura, Chief, Reproductive Statistics Branch, Division of Vital Statistics, NCHS, describes birth data and explains its uses in assessing welfare reform. Regulations implementing the “illegitimacy bonus” specify NCHS data as the basis of state awards. Reporting procedures and data are therefore being “more carefully examined,” according to Ventura. Birth data is collected through the federal-state Vital Statistics Cooperative Program, which provides information on all births, including information on mother’s age, race, Hispanic origin, marital status, number of previous children, and educational attainment. Birth certificate information on the age and marital status of the mother are “quite reliable, and they can be used with confidence in evaluating welfare reform,” according to Ventura. Information on fathers is “less well reported, especially when the parents are not married.”

Resource constraints at the federal and state level have led NCHS to stop collecting information on the dates of the mother’s previous live births or pregnancy terminations. Yet, information on birth spacing has implications for welfare reform, since closely spaced births and larger numbers of children may make the goal of self-sufficiency more difficult for welfare recipients to attain. Ventura summarizes proposed revisions to the standard birth certificate, recommended by a panel of experts and scheduled to take effect in 2003, that would increase the usefulness of birth data in assessing welfare reform. She also notes the need for states and the federal government continuing to work together to preserve and heighten the quality of vital statistics.

Finally, Stanley Henshaw, a reproductive epidemiology consultant and former deputy director of research at the Alan Guttmacher Institute (AGI), discusses the adequacy of abortion data. Abortion data are needed to measure states’ performance on PROWRA’s goal of reducing nonmarital childbearing *without increasing abortions*. The data are also needed to investigate whether state welfare reform policies may inadvertently lead to increases in abortion. (Such concerns, for example, have been expressed about family cap policies, adopted by some states, which eliminate additional payments for children conceived while the mother is receiving welfare.)

Henshaw describes two major sources of information on abortion: the Alan Guttmacher Institute’s survey of abortion providers and data from state health departments, as reported to the Centers for Disease Control and Prevention. Either source may be used to determine state eligibility for bonuses under PRWORA. Health department data provide information on the numbers of abortions and characteristics of women receiving them. Not all states have mandatory reporting, however, and abortions performed by small facilities are often missed. AGI does not collect information on women receiving abortion, but strives to identify all abortion providers and periodically surveys them, producing abortion totals that are often more complete than health department counts. For example, in 1996, 26 states reported totals that were more than 5 percent lower than AGI’s, and figures were more than 20 percent lower in 12 of these states. “In most of these cases,” writes Henshaw, “the state health department figures are almost certainly significantly incomplete.” Comparisons from earlier years show similar discrepancies, but not necessarily for the same states. The accuracy of state abortion figures may also be affected by

inconsistencies in reporting at the clinic level, whether abortion reporting is voluntary or mandatory within a state, whether abortions are reported by the state in which a woman resides or the state in which the abortion is performed, or other factors.

Henshaw describes several options for improving existing state reporting systems, including the establishment of a cooperative federal-state reporting system similar to that used by NCHS for natality and mortality statistics. Such a system, which would require new legislation, might include “strong incentives” for mandatory reporting and a minimum set of information on each abortion, such as: month of the procedure; weeks of gestation; abortion procedure used; and the woman's age, marital status, state and county of residence, education, race, and ethnicity. NCHS's model reporting form, the "U.S. Standard Report of Induced Termination of Pregnancy" includes these items. To help assess welfare reform, Henshaw suggests adding a question on welfare receipt. The federal government could also mandate that all states require medical facilities to report on abortions individually, rather than in the aggregate. This change would make it possible to analyze abortion patterns by combining characteristics such as age, race, and marital status. Finally, the federal government could more actively monitor and enforce existing reporting requirements, increase subsidies and sanctions to encourage quality reporting, and provide training to officials in abortion-reporting systems.

These essays document the major strengths and weaknesses of the key data sources on births, marriage, divorce, abortion, the living arrangements of children, and related matters—and suggest how they may be improved. Future publications from the Welfare Reform Academy will examine the strengths and limitations of Census Bureau data and other statistical sources not covered here, discuss the application of these data to performance bonuses, and make a general assessment of family and fertility change after welfare reform.

1

The National Survey of Family Growth

William D. Mosher and Joyce C. Abma



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Part of a forthcoming monograph
Data Needs for Measuring Family and Fertility Change After Welfare Reform
Douglas J. Besharov, Editor

1

The National Survey of Family Growth

*William D. Mosher and Joyce C. Abma**

The National Survey of Family Growth (NSFG) provides a rich source of reliable national-level data on marriage, divorce, childbearing, and parenthood—as well as information on participation in programs such as welfare, food stamps, Medicaid, and others. This essay explains how NSFG data contribute to our understanding of these topics and notes ways in which the survey could be enhanced to respond to concerns in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA, 42, U.S.C. § 1305).

To illustrate the insights that can be gained from NSFG data, this essay presents statistical comparisons of mothers receiving Aid to Families and Dependent Children (AFDC) in 1995 with other low-income mothers, higher-income mothers, and childless women. The NSFG data show that mothers receiving AFDC in 1995 were more likely than other women to have been raised by single parents, to have had a non-voluntary first intercourse, and to have had their first sexual experience with a man who was 7 or more years older than they were. Moreover, their first sexual intercourse occurred at a younger average age. About one-third of the women in this group had had a birth before age 18, and their first pregnancy was more likely to be unintended than were the first pregnancies of the women in the other groups. The mothers receiving AFDC also were more likely to be using female sterilization as a birth control method than were other mothers.

The most recent NSFG was conducted in 1995, giving us a statistical portrait of women receiving AFDC just before the 1996 welfare reform legislation was passed. The next survey, in 2002, will give us a portrait of women, men, and families 6 years after the legislation was enacted.

Background

Goals of welfare reform. The Welfare Reform Act of 1996 begins with a clear statement of its goals and premises:

The Congress makes the following findings:

- (1) Marriage is the foundation of a successful society.
- (2) Marriage is an essential institution of a successful society which promotes the interests of children.

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- (3) Promotion of responsible fatherhood and motherhood is integral to successful child rearing and the well-being of children. . . .
- (5c) The increase in the number of children receiving public assistance is closely related to the increase in births to unmarried women. . . .
- (8) The negative consequences of an out-of-wedlock birth on the mother, the child, the family, and society are well documented. . . .

* * *

- (10) In light of this demonstration of the crisis in our Nation, it is the sense of the Congress that prevention of out-of-wedlock pregnancy and reduction in out-of-wedlock birth are very important Government interests and the policy contained in. . . this Act is intended to address the crisis.” (§ 101)

The viewpoint expressed in the law is that children should be raised by married couples and that out-of-wedlock childbearing and single parenthood lead to demonstrable costs to the child and to society, including a greater likelihood of the receipt of public assistance. Section 905 of the law requires the Secretary of Health and Human Services to report annually to Congress on “the progress that has been made” in “preventing out-of-wedlock teenage pregnancies,” and section 906 requires a research program that “studies the linkage between statutory rape and teenage pregnancy.”

About NSFG. The need for surveys to collect information on factors related to marriage, divorce, pregnancy, and childbearing has long been recognized in the United States. Surveys similar to (but smaller than) the NSFG were conducted by other organizations in 1955, 1960, 1965, and 1970. The National Center for Health Statistics (NCHS) conducted the NSFG in 1973, 1976, 1982, 1988, and 1995, with samples of 8,000-11,000 women 15-44 years of age (Mosher and Bachrach 1996). The survey has been designed to provide reliable national estimates of factors associated with birth and pregnancy rates and family formation.

The NSFG responds to the requirement in the Public Health Service Act that the NCHS “shall collect statistics on . . . family formation, growth, and dissolution” (§ 306 (b)1(h) 42 USC 242). The NSFG data on contraceptive use, marriage and cohabitation, sexual activity, and infertility help NCHS produce data that supplement—and help amplify and explain—the data produced by the birth registration system (see the essay by Ventura in this monograph, as well as Ventura, Mosher, Curtin, Abma, and Henshaw 2000).

NSFG data are also used in the following ways, among others:

- To document statistically the determinants and consequences of teenage pregnancy, in the U.S. Department of Health and Human Services (HHS) annual report to Congress on teenage pregnancy required by Section 905 of the Welfare Reform Act (U.S. Department of Health and Human Services 2000).

- For the Title X family planning program administered by HHS Office of Population Affairs, the NSFG provides measures of the need for the program and the services received by clients of Title X and other programs (e.g., Frost, 2001; Abma, Chandra, Mosher, Peterson, and Piccinino 1997).
- For the National Institute for Child Health and Human Development, the NSFG helps identify topics that need further investigation and serves as a source of data for scholars and policy researchers (e.g., Bumpass and Lu, 2000).
- To measure gains made toward achieving numerous Healthy People 2010 objectives.
- As a basic source of statistical data for the National Campaign to Prevent Teen Pregnancy (e.g., Anderson, Driscoll, and Lindberg, 1998; Terry and Manlove 2000).

The results of the survey have been published in more than 250 NCHS reports and articles in scientific journals (e.g., Mosher and Bachrach, 1996; Abma, Chandra, Mosher, Peterson, and Piccinino 1997; Ventura, Mosher, Curtin, Abma, and Henshaw 2000; Abma and Sonenstein 2001; Bramlett and Mosher 2001). Many of those reports have focused on the following factors affecting birth and pregnancy rates:

- Marriage, divorce, unmarried cohabitation, and sexual intercourse among teens and adults.
- Contraceptive use, sterilization, infertility, and breast-feeding.
- Miscarriage, stillbirth, and wanted and unwanted births.

NSFG provides reliable data at the national level on marriage, divorce, childbearing, and parenthood (including out-of-wedlock teenage pregnancies) and the characteristics of women's sexual partners. The 2002 NSFG will also interview men in order to produce reliable data on fatherhood and men's role in teen pregnancy prevention and childrearing. In addition, the survey also collects information on work, child care, and the amount and sources of income, including welfare, food stamps, and Medicaid, among others.

An outline of the 1995 NSFG questionnaire follows:

- Background:
 - Periods of living with mother, father, and grandparents during childhood.
 - Work history.
- Pregnancy history and family formation:
 - Pregnancies and births.
 - Adoption, stepchildren, foster children.
- Marriages and relationships:
 - Marriage history and cohabitation history.
 - First intercourse.

- Partner history, 1991-1995.
- Sterilization operations.
- Whether difficult or impossible to get pregnant or carry to term.

- Contraception and birth expectations:
 - All contraceptive methods ever used.
 - Methods used in 1991-1995.
 - Wantedness of pregnancies.
 - Births expected in the future.

- Use of medical services:
 - Family planning services, infertility services, and other medical services.
 - Diseases related to infertility
 - HIV testing

- Demographic characteristics:
 - Race and ethnicity, religion, child care, income, health insurance.

The 1995 National Survey of Family Growth (NSFG) was based on in-person interviews with a national sample of 10,847 women 15 to 44 years of age. It provides a unique and detailed statistical portrait of American women and families, focusing on factors affecting birth and pregnancy rates (including out-of-wedlock and teenage childbearing), women's health, and marriage and divorce.

The next NSFG, in 2002, will be based on in-person interviews with a national sample of about 19,000 men and women 15-44 years of age. The data collected will describe how American men, women, and families are changing over time.

Methodology of the NSFG. The 1995 NSFG contains data on sexual activity, marriage, infertility, contraceptive use and other behaviors by factors such as age, education, income, receipt of welfare or other income assistance, race and Hispanic origin; the types of medical services received in the last year, if any, and where that care was received; and neighborhood characteristics.

It is often noted that telephone surveys are faster and less expensive to conduct than in-person studies like the NSFG. But the NSFG and its predecessor surveys have always been based on in-person interviews, for several reasons. First, given the sensitive subject matter of the interview, it is important that the respondent can verify the identity and legitimacy of the interviewer (which is not possible by telephone). Second, the interviewer can ensure the respondent's privacy and provide materials and explanations that ensure that the respondent understands the questions and the answer choices. Third, in-person interviews have higher response rates and provide better coverage of low-income populations. For example, in the 1995 NSFG, more than 1 in 5 AFDC recipients (22 percent) lived in a household without a telephone, as did 12 percent of other low-income women (i.e., those with incomes below 200 percent of the poverty line). These

households would have been missed if the survey were conducted by telephone. The NSFG is based on in-person interviews conducted in the households of the responding women.

Before 1995, the surveys took about 60 to 70 minutes to complete; in 1995, however, the interviews averaged 100 minutes. Response rates have averaged about 79 percent. In 1995, the interviews were conducted using laptop computers, and some of the data were collected using a technique called Audio Computer-Assisted Self-Interviewing (Audio CASI), in which the respondent entered her answers into the computer herself. Interviews were conducted in private in either English or Spanish. Parental consent was obtained for interviews with women 15 to 17 years of age. The sample was drawn from the civilian, non-institutional population of the United States (Mosher 1998; Kelly, Mosher, Duffer, and Kinsey 1997).

All surveys are affected by sampling error (which can be measured well) and non-sampling error (which is harder to measure). Sampling error is the difference between the results obtained from the sample—in this case, of 10,847 women—and the results that would have been obtained if all 60 million women 15-44 years of age were interviewed. Non-sampling error is caused by inability to interview every person in the sample, and the inability of respondents to provide some of the information requested. The NSFG has always been designed to minimize both types of error and to collect the highest quality data possible. Sampling error is minimized by the sample design. To minimize non-sampling error, the questionnaire is carefully constructed; the interviewer materials are customized to the survey; the interviews are conducted in person by professional female interviewers, who receive an intensive, seven-day training session.

Extensive checks on the quality of the information are built into the interview and conducted during data processing. For example, the survey estimates of births match well with the number of births reported in the birth registration system (Abma, Chandra, Mosher, Peterson, and Piccinino 1997, table 6).

Measures of sampling error for the percentages shown in table 2 are shown in Appendix Table A. Sampling variation is fairly small in tables 1-4 because the sample sizes are quite large in the groups shown in tables 1-4. (The size of the sampling errors in table 2 is very similar to those in tables 1, 3, and 4, because the denominators of the percentages are the same in tables 1-4.) Measures of sampling error for every statistic in tables 1-6 are available from the authors on request.

The data described in this chapter are primarily from the 1995 NSFG. In 2002, the survey will include about 11,800 women and, for the first time, 7,200 men of reproductive age, for a total sample of 19,000.

Trends in Contraceptive Use by Income

NSFG data can be used to monitor how families in different segments of the population are changing over time. For example, a recent article described contraceptive use among white and black women by household income level (Piccinino and Mosher 1998). That analysis showed

that, among low-income black women, the proportion using the oral contraceptive pill dropped *by half*, from 41 percent to 20 percent, between 1988 and 1995. This pronounced drop was offset by increases in use of female sterilization, which rose from 41 percent to 52 percent, and use of Norplant implants and Depo-Provera injectables, which increased to 6 percent. It is likely that these changes in contraception among low-income Black women helped produce the sharp decline in the birth rates that occurred among young Black women in the 1990s (Ventura, Mosher, Curtin, Abma, and Henshaw 2000).

Other research based on the NSFG (Ranjit, Bankole, Darroch, and Singh 2001) shows that sterilization, implants, and injectables have lower rates of accidental, or unintended, pregnancy than the pill. Among low-income white women, a similar but smaller drop in the use of oral contraceptive pills (from 36 percent to 25 percent) was accompanied by increases in the use of female sterilization, implants, and injectables. Recent studies have found income to be closely correlated with effective use of the pill and other contraceptive methods (Ranjit, Bankole, Darroch and Singh 2001, tables 5 and 6). Another recent study showed that the increases in use of injectable and implant contraception were especially pronounced among Black mothers under age 25, and that their birth rates declined sharply in the 1990's (Ventura, Mosher, Curtin, Abma, and Henshaw 2000).

A Profile of Women Receiving Welfare in 1995

Tables 1, 2, 3, and 4 describe three groups of mothers and a comparison group of childless women in 1995, the year before the welfare reform act was passed. The four groups are:

- Mothers receiving AFDC.
- Mothers not receiving AFDC but with household incomes less than twice the poverty level.
- Mothers with higher household incomes (greater than or equal to 200 percent of the poverty level).
- Childless women with higher household incomes.

The NSFG sample included 1,008 mothers in the AFDC group, 2,120 other low-income mothers, 3,765 higher income mothers, and 2,225 women who, although childless, have had intercourse at some time. The variables chosen may be viewed both as measurements of some of the factors that sometimes lead to receipt of welfare, and as factors that help measure how people using public programs are faring. Collecting data on variables such as these over time is one way to monitor the effects of changes in the economy and the effects of public policies on various segments of the population. Complex multivariate analyses (of, for example, factors affecting receipt of welfare) are possible using NSFG data, but they are outside the scope of this chapter.

Table 1 shows some demographic and economic characteristics of the four groups of women. Women receiving AFDC in 1995 averaged 30 years of age, somewhat younger than other low-income and higher-income mothers. Women receiving AFDC had an average of 2.5 children, about the same as other low-income mothers, but significantly more than the higher-income

mothers. On average, women receiving AFDC expected to have three children, about the same as the other low-income mothers, but more than the two higher-income groups. Mothers receiving

	AFDC	One or More Births, No AFDC		Childless and Income \geq 200% of Poverty
		Income <200% of Poverty	Income \geq 200% of Poverty	
Sample <i>n</i>	1,008	2,120	3,765	2,225
Mean number of:				
Live births	2.5	2.4	1.9	0.0
Additional births expected	0.5	0.4	0.4	1.6
Total births expected	3.0	2.8	2.3	1.6
Years of school completed	10.8	11.5	13.5	13.9
Mean income/ poverty level (%)	106	131	420	490
Mean age (years)	30	33	36	28
Mean age at first intercourse	16	17	18	18
Percent with no tele- phone in household	22	12	2	2
NA = Not applicable. Source: 1995 National Survey of Family Growth.				

AFDC averaged less than 11 years of school (10.8 years)—less than a high school diploma and less than the other groups. Their income was also lower (about the same as the poverty level).

Table 2 shows some data on early life—the respondents' parents, early sexual activity and contraceptive use—highlighting some striking differences between AFDC mothers and others. For example, more than half (58 percent) of those receiving AFDC had been raised by one parent at least part of their childhoods—far more than the 31 to 40 percent of women in the other three groups. About 61 percent of the AFDC group did not use any contraceptive method at first intercourse; about the same proportion as among other low-income mothers, but much more than in the two higher-income groups. For 65 percent of AFDC recipients, the first pregnancy was unintended, compared with just 50 percent of other low-income mothers and only 42 percent of higher-income mothers. This difference is probably related to younger childbearing: 32 percent of mothers receiving AFDC had had a birth before age 18—far more than in the other three groups.

Table 2: U.S. Women Ages 15 to 44 by Welfare Status and Selected Family Background and Early Reproductive Experience				
	AFDC (%)	One or More Births, No AFDC		Childless & Income \geq 200% of Poverty (%)
		Income <200% of Poverty (%)	Income \geq 200% of Poverty (%)	
Sample <i>n</i>	1,008	2,120	3,765	2,225
Woman raised by:				
2 parents from birth	42	60	69	64
1 parent some/all the time	58	40	31	36
First intercourse was:				
Not voluntary	14	9	6	6
Voluntary but not wanted	28	28	20	20
Voluntary and wanted	58	63	73	75
Birth control method at first voluntary intercourse:				
Pill	17	16	23	19
Condom	17	20	23	43
Withdrawal	4	5	9	7
Other	1	3	4	4
No method	61	56	41	28
First voluntary male partner was:				
Same age as she was or younger	19	20	25	24
1-4 years older	56	57	59	59
5-6 years older	9	11	8	7
7 or more years older	16	12	8	10
First pregnancy was:				
Intended	35	50	58	—
Unintended	65	50	42	—
Age at first childbirth:				
Under 18	32	18	9	NA
18-19	30	24	13	NA
20-24	28	41	37	NA
25 or older	10	17	42	NA
NA = Not applicable. Source: 1995 National Survey of Family Growth.				

Of the women receiving AFDC in 1995, 14 percent said that their first sexual intercourse was not voluntary, as table 2 also shows. Another 28 percent reported that their first intercourse was voluntary (i.e., not forced) but not really wanted. Thus, 42 percent of women in the AFDC group had a first intercourse that was either not voluntary or not wanted—similar to the 37 percent of low-income mothers but higher than the 26 percent of higher-income mothers (see also Abma, Driscoll, and Moore 1998). Finally, among the women receiving AFDC, 16 percent reported that their first voluntary male partner was 7 or more years older than the respondent—not dramatically different from other low-income women.

The data in tables 1 and 2 suggest some of the characteristics that most clearly distinguish women who received AFDC in 1995 from those who did not. Those receiving AFDC were much more likely to have grown up in one-parent households; their first pregnancies were much more likely to be unintended (nearly two-thirds were unintended), and they were much more likely than others to have a birth before they were 18.

Table 3 shows the four groups of women by their current contraceptive use and birth intentions at the date of interview. The proportion of women who were having intercourse (in the 3 months before the interview) but were not using any method of contraception was about the same in each of the 3 groups of mothers: 4 to 6 percent. The differences are small and are not statistically significant. The proportion using contraception at the date of interview was 70 percent among women on AFDC—higher than the proportion of childless women using contraception, but lower than the two other groups of women with children.

Nearly half (49 percent) of those receiving AFDC in 1995 had had tubal sterilizations for contraceptive reasons. In addition, by 1995, 13 percent of the women in this group were already using either Norplant or Depo-Provera, compared with 3 to 6 percent of the respondents in the other three groups. In short, women receiving AFDC tended to be using the most effective contraceptive methods available—sterilization, implants, and injections—at least as much as the other two groups of mothers. Finally, 27 percent of women receiving AFDC in 1995 intended to have at least one more birth, a marginally higher proportion than in the other two groups of mothers.

	AFDC (%)	One or More Births, No AFDC		Childless and Income \geq 200% of Poverty (%)
		Income < 200% of Poverty (%)	Income \geq 200% of Poverty (%)	
Sample <i>n</i>	1,008	2,120	3,765	2,225
Use of contraception:				
Having intercourse and not using a method	6	5	4	8
Using contraception	70	78	79	63
Method of contraception:				
Female sterilization	49	46	33	3
Male sterilization	1	8	19	5
Norplant implants	5	2	1	1
Depo-Provera shots	8	4	2	3
Pill	17	19	17	49
Condom	15	14	17	29
Other	6	7	11	10
Do you intend to have any (more) births?				
Yes	27	22	18	67
No	68	72	75	25
Don't know, nor sure, or disagree with partner	5	6	7	8
Fecundity status:				
Surgically sterilized for contraceptive reasons	34	41	40	5
Surgically sterilized for health reasons	2	4	5	2
Impaired fecundity	11	9	10	13
Fecund	53	46	45	80
NA = Not applicable. <i>Source:</i> 1995 National Survey of Family Growth				

Table 4 shows several other measures of characteristics of the four groups of women at the date of interview. About half (52 percent) of mothers receiving AFDC had been married at some time in their lives. Although this proportion is much lower than in the other groups of mothers, the data do not correspond to the popular image of the never-married teenage welfare recipient.

Table 4: Percentage of U.S. Women Ages 15 to 44 by Welfare Status and Selected Characteristics, 1995				
	AFDC (%)	One or More Births, No AFDC		Childless and Income \geq 200% of Poverty (%)
		Income <200% of Poverty (%)	Income \geq 200% of Poverty (%)	
Sample <i>n</i>	1,008	2,120	3,765	2,225
Marital and cohabitation history:				
Ever married	52	85	95	43
Ever cohabitated	28	8	3	18
Neither	20	7	2	39
Unmarried women—number of male sexual partners in past 12 months:				
None	12	16	15	16
1 man	48	50	54	52
2 men	16	16	18	17
3 or more men	25	18	13	14
All women—intercourse in past 12 months:				
All 12 months	63	76	82	61
9-11 months	10	8	8	11
1-8 months	15	9	7	15
No intercourse at all	13	7	4	13
Labor force status last week:				
Working	19	49	64	71
Going to school	10	3	1	16
All other	70	48	35	13
Importance of religion in daily life:				
Very important	52	57	54	36
Somewhat important	40	36	38	46
Not important	9	7	8	18
<i>Source: 1995 National Survey of Family Growth.</i>				

Among currently unmarried mothers receiving AFDC, 63 percent had had intercourse in all 12 of the previous 12 months, compared with 82 percent of higher-income mothers. About 60 percent had had one or no sexual partners in the past 12 months. About 25 percent had had three or more partners in the last 12 months.

About half of the mothers receiving AFDC (52 percent) said that religion was “very important” in their daily lives. Only 9 percent said that religion was “not important.” Those proportions were similar for other low-income mothers and higher-income mothers. Religion was “very important” to a much smaller proportion of the group of women without children.

Role of Neighborhood Characteristics

Is the rate of teen childbearing and welfare receipt related to the neighborhood or community environment, or only to the characteristics of the individuals? To make it possible to study such questions, the NSFG contextual data file, which is available to qualified researchers through the NCHS Research Data Center (<http://www.cdc.gov/nchs/r&d/rdc.html>), contains data on many characteristics of the areas in which women in the NSFG sample live. Many of the variables are available at the state, county, census tract, and block group levels. Researchers can thus examine outcome variables (such as marriage, contraception, or childbearing) by measures such as:

- Percentage of population black, white, Hispanic.
- Median rent; median value of homes.
- Median family income; median household income.
- Percent receiving public assistance.
- Average value of public assistance.
- Unemployment rate.
- Percent with incomes below poverty level.
- Crime rates (violent, property, and total).
- AFDC payment per family, or per recipient.
- AFDC income cut-off.

Tables 5 and 6 illustrate how these variables can be used, employing characteristics of the block group (the smallest of these four units) as an indicator of the neighborhood environment. Neighborhood characteristics come from block group-level data as measured in the 1990 census, and the sample is limited to women for whom community characteristics were available. Three measures of neighborhood economic conditions are shown: median family income, unemployment rate, and percentage of households receiving public assistance. Data are presented for all women, white non-Hispanic women, and Black non-Hispanic women. Data for all women includes Hispanics, Asians, and American Indians. These groups could not be shown separately because there were not enough of them in the sample to generate reliable statistics.

Table 5 presents data for 3,821 women age 18 to 29, and shows the percentage of those women who had a birth before age 18. Table 6 is limited to women 15 to 19, and shows the percents of women 15 to 19 who had ever had sexual intercourse.

Establishing the role that the neighborhood or community environment plays in affecting individual behavior requires complex statistical analyses that are beyond the scope of this chapter (for examples, see Billy, Brewster, and Grady 1994; Brewster, 1994; Mosher and McNally 1991). Tables 5 and 6, however, show some simplified examples. These data are nonetheless consistent with South and Baumer’s (2000, p. 1379) finding that “(most) of the racial difference in the risk

of premarital childbearing can be explained by racial differences in neighborhood quality” and with Kirby, Coyle, and Gould’s (2001) finding that most of the differences between areas in the teen birth rate were associated with the levels of poverty and education in the community.

Community characteristic (in 1990)	All Women¹	White (Non-Hispanic)	Black (Non-Hispanic)
Average for all communities	8	5	18
Median family income:			
Less than \$20,000	21	10	33
\$20,000-49,999	8	6	15
\$50,000 or greater	3	2	2
Unemployment rate:			
Less than 5 percent	6	4	9
5-9 percent	8	6	17
10 percent or greater	16	7	27
Percentage of households on welfare:			
Less than 3 percent	5	4	10
3-8 percent	7	5	14
9 percent or greater	15	8	25
<p><i>Note:</i> All three neighborhood characteristics in this table were measured at the block group level, using summary tape files from the 1990 census. Sampling error estimates for all tables in this chapter are available from the authors on request.</p> <p>¹ All women category includes Hispanics, Asians and American Indians. These groups are not shown separately because there were not enough of them in the sample to generate reliable statistics in this table.</p> <p><i>Source:</i> 1995 National Survey of Family Growth contextual data file.</p>			

Eight percent of women 18-29 years of age (for whom information on community characteristics was available) had had a birth before age 18, including 5 percent of white women, and 18 percent of black women. For white women in low-income neighborhoods (median family incomes below \$20,000), 10 percent had given birth before age 18. In neighborhoods with median incomes of \$50,000 or more, the proportion was only 2 percent. Among non-Hispanic Black women, 33 percent living in low-income areas had given birth before they were 18. Thus, although Black teens in poor neighborhoods were more likely to have had a birth than white women, *births before age 18 were equally rare to both white and Black teens in higher-income neighborhoods.*

For white women, unemployment levels did not seem to predict the likelihood that a women had given birth before age 18. For Black women, however, the proportion who had had a birth

before age 18 was 9 percent in low-unemployment areas and 27 percent in high-unemployment areas. A fairly similar pattern was seen for levels of welfare receipt in the neighborhood.

Table 6 looks at these patterns for teenagers—females ages 15 to 19. About 61 percent of white teens in low-income neighborhoods had had intercourse, compared with just 38 percent in areas with median incomes of \$50,000 and up. The same pattern holds just as strongly for Black

Table 6: Percentage of Females Ages 15 to 19 Who Had Ever Had Sexual Intercourse, by Race and Specified Community Characteristics, 1995			
Community characteristic (in 1990)	All Women¹	White (Non-Hispanic)	Black (Non-Hispanic)
Average for all communities	50	50	60
Median family income:			
Less than \$20,000	69	61	68
\$20,000-49,999	51	51	57
\$50,000 or greater	37	38	45
Unemployment rate:			
Less than 5 percent	42	43	56
5-9 percent	54	57	56
10 percent or greater	66	57	64
Percentage of households on welfare:			
Less than 3 percent	43	44	55
3-8 percent	48	50	49
9 percent or greater	63	58	65
<p><i>Note:</i> All three neighborhood characteristics in this table were measured at the block group level, using summary tape files from the 1990 census. Sampling errors are larger in this table than in tables 1-5 because the number of sample cases is smaller in table 6 (n=1,400) than in tables 1-5. Sampling error estimates for all tables in this chapter are available from the authors on request.</p> <p>¹ All women category includes Hispanics, Asians and American Indians. These groups are not shown separately because there were not enough of them in the sample to generate reliable statistics in this table.</p> <p><i>Source:</i> 1995 National Survey of Family Growth contextual data file.</p>			

teenagers: 68 percent in the poorest areas and 45 percent in the most affluent areas had had intercourse. Similarly, teens who live in areas of high unemployment (10 percent and higher) were more likely to have had intercourse than were teens in areas with low unemployment. Finally, teens living in neighborhoods in which less than 3 percent of the households received welfare were much less likely to have had intercourse than were those in areas in which 9 percent or more of the households were receiving welfare benefits.

The findings in tables 5 and 6 are consistent with theories suggesting that not just individual characteristics, but also economic opportunity and other neighborhood characteristics affect patterns of teenage sexual behavior. These can be monitored in future cycles of the NSFG, and verified with detailed multivariate studies, such as those by Hogan, Astone, and Kitigawa (1985); Mosher and McNally (1991); Billy, Brewster, and Grady (1994); Brewster (1994); South and Baumer (2000); and Kirby, Coyle, and Gould (2001).

Looking to the Future

In 2002, Cycle 6 of the NSFG is expected to interview about 11,800 women and 7,200 men ages 15 to 44. Black and Hispanic men and women will be sampled at higher rates than white men and women, and teenagers will be sampled at a higher rate than adults, in order to allow for more detailed analyses of these groups. Trends and differences in sexual activity, contraceptive use, marriage, divorce, and cohabitation, will be measured more reliably and more consistently than ever before.

Recent changes in the administration of the survey have made it possible to conduct the NSFG more frequently and more flexibly than in previous years. If Cycle 6 is completed in 2002, for example, Cycles 7 and 8 could follow at three-year intervals—in 2005 and 2008—if funding is sufficient. Conducting the survey every three or four years would make the data more useful for monitoring the changes in American families over the next decade.

Finally, several options for the 2005 and 2008 surveys are being considered:

1. Many men who are in prisons and jails are fathers. Including a sample of incarcerated men could help to measure the prevalence of absent fathers in various groups in the population and help to understand the impact of their absence on their families.
2. National household surveys usually exclude men and women in the military. Including respondents who are in the military would provide data comparable to those for the civilian population on patterns of marriage, divorce, contraception, unintended pregnancy, and family growth among those in the military.
3. Collecting biomarkers such as urine, saliva, or hair samples could help further our understanding of some of the correlates of health and disease, teenage pregnancy, marriage and divorce, and infant health.
4. Conducting a 4-month follow-up survey to collect more detailed, reliable data on the consistency with which contraceptives are used, and how unintended pregnancies occur, could supply information that would help to improve birth control counseling, especially among groups with high rates of pregnancy, including sexually active teens, minorities, and the poor.
5. Increasing the sample size of the survey to as many as 35,000 interviews could allow for larger samples of Black, Hispanic, or Asian respondents; or larger numbers of teenagers; or

samples that would allow separate estimates for regions or selected states. The age range could be expanded (e.g., up to age 59) to improve statistics on topics such as cohabitation, marriage, divorce, child care and child support, and blended families.

The cost of any of these options must be funded separately, but the marginal costs would be lower than the costs of doing an independent study to accomplish the same goal.

Compared with other surveys of families and children, then, the NSFG can provide useful data on out-of-wedlock and teenage childbearing, unintended pregnancy, marriage, divorce and cohabitation, and a variety of other outcomes, as discussed. In short, the NSFG is in a position to provide a reliable and detailed statistical portrait of the ways in which American men, women and families deal with the changing conditions in which they live.

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Appendix

Appendix Table A: 95 Percent Confidence Intervals¹ for the Percentages in Table 2				
	AFDC (%)	One or More Births, No AFDC		Childless and Income \geq 200% of Poverty (%)
		Income <200% of Poverty (%)	Income \geq 200% of Poverty (%)	
Woman raised by:				
2 parents from birth	40.2-43.8	58.6-61.4	68.0-70.0	62.7-65.3
1 parent some/all the time	56.2-59.8	38.6-41.4	30.0-32.0	34.7-37.3
First intercourse was:				
Not voluntary	12.5-15.5	8.2-9.8	5.6-6.4	5.5-6.5
Voluntary but not wanted	26.2-29.8	26.7-29.3	19.2-20.8	19.2-20.8
Voluntary and wanted	56.1-59.9	61.7-64.3	72.2-73.8	74.1-75.9
Birth control method at first voluntary intercourse:				
Pill	15.5-18.5	15.1-16.9	22.2-23.8	18.1-19.9
Condom	15.5-18.5	19.0-21.0	22.3-23.7	41.9-44.1
Withdrawal	3.2-4.8	4.4-5.6	8.5-9.5	6.4-7.6
Other	0.6-1.4	2.6-3.4	3.6-4.4	3.6-4.4
No method	58.9-63.1	54.8-58.2	40.1-41.9	27.0-29.0
First voluntary male partner was:				
Same age as she was or younger	17.4-20.6	18.9-21.1	24.3-25.7	23.0-25.0
1-4 years older	54.0-58.0	55.7-58.3	58.0-60.0	57.8-60.2
5-6 years older	7.9-10.1	10.2-11.8	7.5-8.5	6.4-7.6
7 or more years older	14.6-17.4	11.2-12.8	7.5-8.5	9.3-10.7
First pregnancy was:				
Intended	33.1-36.9	48.7-51.3	57.1-58.9	–
Unintended	63.1-66.9	48.7-51.3	41.1-42.9	–
Age at first childbirth:				
Under 18	30.2-33.8	17.1-18.9	8.5-9.5	NA
18-19	28.4-31.6	22.9-25.1	12.4-13.6	NA
20-24	26.5-29.5	39.8-42.2	36.2-37.8	NA
25 or older	8.9-11.1	16.1-17.9	41.1-42.9	NA
¹ This means that the chances are 95 out of 100 that the true value of the percentage in the total population is between the upper and lower percentages shown. NA = Not applicable. Source: 1995 National Survey of Family Growth				

2

Vital Statistics from the National Center for Health Statistics

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Part of a forthcoming monograph
Data Needs for Measuring Family and Fertility Change After Welfare Reform
Douglas J. Besharov, Editor

2

Vital Statistics Data from the National Center for Health Statistics

*Stephanie J. Ventura**

Data on births, deaths, marriages, and divorces are reported to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program (VSCP), which is jointly funded by the states and NCHS. This essay considers several specific topics:

- The nature and sources of vital statistics data.
- How NCHS and the state health departments collaborate in their efforts to produce high-quality data.
- The data items on the birth certificate that can be useful in assessing welfare reform, especially maternal age and marital status.
- The current limitations of vital statistics data in assessing change in such areas as teenage pregnancy and out-of-wedlock childbearing.
- The discontinuation of the collection of detailed marriage and divorce data by NCHS.
- Some of the resource constraints that NCHS and the states face and the impact of those pressures on vital statistics data.

The Vital Statistics System and the U.S. Standard Certificates

Vital statistics data on births are based on 100 percent of the birth certificates from all states and the District of Columbia. Data are also available for Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The unique and irreplaceable feature of vital statistics data is that information is available for virtually every birth that occurs in the nation. Birth registration is a state function (as is death registration). The information on the birth certificate for every birth is collected and coded by the states and reported electronically on a continuous basis to the NCHS (NCHS 2000).

Information on a wide variety of maternal and infant characteristics is reported on the birth certificate (see figure 1). Examples of demographic information include mother's and father's ages, mother's marital status, race and Hispanic origin of mother and father, the number of previous children for the mother, and mother's and father's educational attainment. The data items on which this information is based are brief and provide limited detail. Nonetheless, the information can be invaluable in tracking trends in, for example, teenage birth rates and out-of-wedlock births.

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NCHS plays an important role in promoting and ensuring, to the extent possible, uniformity and comparability of data across states. The most critical pathway for achieving those goals is through the standard certificates of birth and death, which are developed under the auspices of NCHS in collaboration with state vital statistics officials and representatives of the medical, public health, and research communities. As a result of this collaborative and consensus-seeking approach, the standard birth and death certificates that NCHS ultimately recommends are, in most cases, adopted essentially without change by every state for use in its own area. In addition to promoting uniform standard certificates of birth and death, NCHS also develops and publishes instructional handbooks for completing certificates, provides guidance on definitions, and promotes the development of the model state vital statistics act and regulations that provide guidance and support to state registration officials in implementing the standard certificates for their own states (NCHS 1987, 1995; Kowaleski 1997; Hetzel 1997).

Assessing Welfare Reform with Birth Certificate Data

Many welfare reform goals focus on factors associated with the formation of families, such as the reduction of teenage childbearing and out-of-wedlock births. Several items on the birth certificate are of actual and potential use in assessing the effects of welfare reform; they include ages of the mother and father and the mother's marital status.

Basic demographic information for the mother is reliably completed because it is obtained directly from the mother or is readily obtained from routine medical records. The mother's age is directly reported on the birth certificate in five states (Kentucky, Nevada, North Dakota, Virginia, and Wyoming) and American Samoa. In all other reporting areas, age is computed from the mother's date of birth, an approach that helps ensure the accuracy of that information. Moreover, information on the mother's age is reported for virtually all births. In 1999, only 0.02 percent of the nearly 4 million birth certificates were missing this item (Ventura, Martin, Curtin, Menacker, and Hamilton 2001). Studies in a few states comparing mother's age as reported on the birth certificate with her age as recorded on hospital medical records found a high degree of consistency (Piper, Mitchel, and Snowden 1993; Schoendorf, Parker, Batkhan, and Kiely 1993). Thus, NCHS publications over the past several years that track birth rates for teenagers at the state level are based on highly complete, reliable, and accurate birth certificate data on the mother's age (Ventura, Mathews, and Curtin 1998; Ventura, Curtin, and Mathews 2000).

Mother's marital status is of considerable use for evaluating the effects of welfare reform. As of June 15, 1998, all but two states—Michigan and New York—obtained that information directly from an item on the birth certificate: "Mother married? (At birth, conception, or any time between?) Specify Yes or No" (as figure 1 also shows). A few of the states with the direct question use a slight variation. For example, five states (Indiana, Missouri, Pennsylvania, Tennessee, and Virginia) ask whether the mother is married to the father of the child. North Dakota asks, "Legitimate (Yes or No)," and Minnesota asks, "Child born in wedlock? (Yes or No)." In most states, if the mother is married, the husband's name should be listed as the father, unless a court order provides otherwise. Thus, in all states except for Michigan and New York, a fair degree of consistency and comparability exists in the basic question on which marital status is based.

How is marital status determined in Michigan and New York? Mother's marital status is

inferred in those states. A birth is inferred as nonmarital if either a paternity acknowledgment was received by the state vital statistics registrar or the father's name is missing. Largely as a consequence of welfare reform, which was underway in some states for several years prior to the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), the paternity acknowledgment is now the main indicator of a nonmarital birth in Michigan and New York. PRWORA stipulates that when the parents of a newborn are not married, information about the father can be shown on the birth certificate only if both parents have signed a voluntary acknowledgment of paternity (U.S. Congress 1996). Hence, when a paternity acknowledgment is not present and the parents are not married, the father's name should not be listed; thus, a missing father's name is an indicator that the birth is nonmarital (NCHS 2000; Ventura et al. 2001; Ventura and Bachrach 2000).

Before the enactment of PRWORA, state practices were sometimes more flexible when the parents were not married, permitting a father's name to be listed without his permission; as a result, determining the mother's marital status was almost entirely reliant on a comparison of surnames. Until recently, California, Connecticut, Nevada, and New York City all relied on name comparison. In 1997, however, California and Nevada changed to a direct question as part of the electronic birth registration process, and New York City changed its inferential procedures to match those in effect in New York State, as summarized earlier. Connecticut added a direct question to the state's certificate in mid-1998 (Ventura, Martin, Curtin, and Mathews 1999; Ventura and Bachrach 2000).

Information on mother's marital status from the birth certificate is both a legal determination and an indicator of the family and social situation into which the infant is born. State law has governed the ways in which this information is collected and reported for at least the past six decades. Consequently, collaboration between NCHS and the states is critical to developing the approach most likely to result in data that are consistent and comparable across states and groups. Variations in state law may, in some cases, affect the comparability of marital status data among states, but the changes in the past few years have tended to lead to more rather than less comparability. Changes in reporting procedures in recent years in California, Connecticut, Nevada, and New York City resulted in discontinuity in the trends in the mid-1990s, but sufficient information is available from those states to reconstruct methodologically consistent data. For all other states, data have been remarkably consistent over time.

Note that the information on mother's marital status that was derived from the birth certificate was never intended to be used as the basis for awarding performance bonuses; rather, it was intended only to track statistical trends and variations in out-of-wedlock childbearing. Now that birth certificate data are being used as the basis for financial awards, such as the "bonus to reward decrease in illegitimacy," the reporting procedures and data are being more carefully examined (U.S. Department of Health and Human Services [HHS] 1999; HHS 2000). A state is eligible for the bonus, which is administered by the Administration for Children and Families of HHS, if it is among the top five states with respect to its reduction in the percentage of births that are out-of-wedlock, and if its abortion rate for the most recent year is lower than in 1995. The total bonus award is \$100 million per year, to be distributed annually for four years. A state

ranking among the top five receives \$20 million; if four or fewer states qualify, the award is \$25 million per state.

NCHS is responsible, as specified in the regulations implementing the bonus, for providing the birth data as well as for reviewing and evaluating the state data on nonmarital births to ensure methodological consistency and comparability over time (HHS 1999). The specific birth data that formed the basis for the bonus awards for FY 1999 and FY 2000 (awarded September 13, 1999 and September 15, 2000, respectively) were the ratios of nonmarital births to total births for the most recent two-year period compared with the ratios for the prior two-year period. For example, the birth data examined for the bonus award for FY 2000 were the ratios for 1997 – 1998 compared with the ratios for 1995 – 1996.

It is anticipated that data on the mother's marital status will be of enhanced use, beginning with the next revision of the U.S. Standard Certificate of Live Birth, which is expected to take effect after 2003. The item has two parts: If the mother is not married, a second question asks whether a paternity acknowledgment has been signed in the hospital (figure 2). This additional information may be of great value in assessing the child's family status around the time of birth.

Limitations of the Vital Statistics System for Births

The birth certificate data on maternal age and marital status are of great value and are quite reliable, and they can be used with confidence in evaluating welfare reform. Information on items for fathers, however, such as age, race, or Hispanic origin, is less well reported, especially when the parents are not married. In 1999, for example, the age of the father was missing for 14 percent of all births but for 40 percent of births to unmarried women (Ventura, Martin, Curtin, Menacker, and Hamilton, 2001). To truly assess progress toward welfare reform goals, more data are needed in conjunction with birth certificate data. The birth certificate does not and cannot provide information on the extent to which children stay with their families or how much their family situation changes. The information on the mother's marital status is captured at a single point in time, but the mother may become widowed, separated, or divorced shortly after a child is born. Conversely, she may marry after the child's birth, and the marriage could last at least through the child's upbringing.

Retrospective studies that use the birth certificate as the sampling frame can provide information on the household and family structure in which children are raised. NCHS has conducted a number of such studies, including the 1980 National Natality Survey and the 1988 National Maternal and Infant Health Survey. Currently, the National Center for Education Statistics, in collaboration with other agencies, including NCHS, is preparing to conduct the Early Childhood Longitudinal Survey in 2001.

Information from the birth certificate can, as mentioned, track trends in out-of-wedlock births (i.e., births to women who are not married when the child is born). To track trends in out-of-wedlock *pregnancies*, however, data are also needed on the characteristics of unmarried women who have induced abortions or whose pregnancies end in fetal loss (i.e., miscarriage or stillbirth).

It is estimated that 41 percent of out-of-wedlock pregnancies in 1997 ended in induced abortion and that 12 percent ended in fetal loss. Similarly, 29 percent of teenage pregnancies ended in abortion, and 15 percent ended in fetal loss (Ventura, Mosher, Curtin, Abma, and Henshaw 2001). To track changes in out-of-wedlock or teenage pregnancies, complete and accurate information on abortions is essential. Data on induced abortion and fetal loss are much less current, complete, and reliable than are data on live births; a separate chapter in this monograph addresses the limitations of data on induced abortions.

Data on fetal losses also are important for compiling pregnancy estimates. Although most states require that fetal losses of 20 weeks or longer gestation be reported, the reporting is actually poor, even for late fetal losses. Moreover, most fetal losses occur early in pregnancy, before reporting requirements are in effect. Because of the severe limitations in data on fetal loss from the vital statistics system, we have used fetal loss estimates developed from women's pregnancy histories compiled by the National Survey of Family Growth (NSFG), which provide useful data for national-level estimates. The NSFG, however, cannot produce state-level estimates of fetal losses.

In addition to data on abortion and fetal loss, accurate monitoring of state-level trends in teenage pregnancy (or even teen birth rates) and state-level trends in out-of-wedlock births or pregnancies requires that reliable population denominators be regularly produced so that birth rates can be computed. NCHS' recent reports on state-level teenage birth rates have used annual Census Bureau estimates of state populations by age, sex, race, and Hispanic origin (Ventura, Mathews, and Curtin 1998; Ventura, Curtin, and Mathews 2000; U.S. Bureau of the Census 1999). As the distance between the latest census and the current year lengthens, the reliability of the postcensus estimates can be a concern. Although we have been able to produce annual state-specific birth rates for teenagers, we have not been able to produce state-specific birth rates for unmarried women, except in census years, because the populations needed to compute annual rates are not of sufficient reliability.

This data gap is important because without data on populations by marital status, the only way left to monitor trends in out-of-wedlock childbearing is to examine trends in the *ratios* or *percentages* of out-of-wedlock births. Ratios or percentages are problematic: Although they measure the proportion of all births that are to unmarried women, that proportion can change even if childbearing by unmarried women remains stable. In fact, in the early to mid-1990s, the ratio continued to increase, despite the stability in the nonmarital birth rate, because the rising number of unmarried women led to more nonmarital births and childbearing by married women declined (table 1).

Another area of interest in assessing welfare reform is the formation and stability of two-parent families. Again, birth certificate data can be only indirectly useful, in the sense that the information on marital status provides an indicator of the extent to which children may start their lives in a two-parent family setting. Birth certificate data, however, cannot tell us how many two-parent families there are or the extent to which they remain intact. The question that arises is, can those patterns be tracked with marriage and divorce data from the vital statistics system?

The answer is not clear. Marriage and divorce records provide no information specifically on children from previous partners or on the number of children currently in two-parent families (figures 3 and 4).

The U.S. Standard Certificate of Divorce includes items on the custody arrangements for children of divorcing couples and the number of children in the household at the time the couple stopped living together (see figure 4). It is possible, therefore, to estimate the number of children whose family status changes in a given year as a result of their parents' divorce. However, information is not available on the extent to which the children's living arrangements change because one or both parents remarry. Information is also not available on children whose parents separate but do not legally divorce. To track changes in the family settings in which children live and are raised, a different type of data collection system would be needed, such as a registry or retrospective survey or the Current Population Survey (CPS). The March supplement of the CPS collects information on marital status and living arrangements of men and women (Lugaila 1998).

Funding and Resource Constraints for Collecting Marriage and Divorce Data

Birth certificate data are one of the key components of the National Vital Statistics System, the result of a collaborative, cost-sharing arrangement between the NCHS and the state health departments, known as the Vital Statistics Cooperative Program (VSCP). The VSCP, funded in FY 2001 at about \$14.2 million, was essentially level-funded during the 1990s, receiving its first increase in FY 1999. NCHS worked hard in the 1990s to meet its contractual obligations to the states, which include cost-of-living adjustments that NCHS provides to the states to take account of increases in the costs of data collection and efforts to improve data timeliness. Over the past several years, NCHS was able to maintain the birth and death data systems only by entirely cutting other data systems and by eliminating certain items from the birth and death data sets. Thus, in 1994 NCHS discontinued the collection of abortion data, which were being provided in detail by 14 states. At one time, NCHS had hoped to increase the number of states providing detailed abortion information on the reporting form known as the Induced Termination of Pregnancy Report (see figure 5).

Similarly, NCHS discontinued the collection of individual record data for marriages and divorces after 1995 (Centers for Disease Control and Prevention 1995). Detailed information was available for marriages and divorces through 1995, but reporting was incomplete and of uncertain reliability. A number of states did not have a centralized system for collecting marriage and divorce data, and comparability across states was compromised and uncertain. At the time NCHS discontinued the marriage and divorce data systems, detailed information on marriages was available from 42 states and the District of Columbia, and 31 states and the District of Columbia provided information on divorces. Certain data items were not reported by all states. Moreover, because states were facing their own internal funding and staffing shortages, many had relegated the reporting and collection of marriage and divorce data to a much lower priority than birth and death data, although most states continue to collect, tabulate, and publish selected data items.

Because of resource constraints at the federal and state level, continued concerns about the quality and completeness of the data being received, and the need for additional resources beyond the current investment to address data-quality issues, NCHS was forced to discontinue the detailed marriage and divorce data collection after 1995 (Centers for Disease Control and Prevention 1995). Currently, the only information that NCHS collects is the number of marriages and divorces occurring in each state, with no information on the characteristics of the people marrying or divorcing. To reestablish the marriage and divorce data systems and build them to a level of completeness and quality that did not previously exist, a detailed assessment would be needed that takes into account the complexity and effort required.

In addition to ending the collection of induced abortion, marriage, and divorce data, NCHS curtailed the collection of certain data items on the birth and death certificates in order to meet its contractual obligations to the states. For example, NCHS no longer collects information on the dates of the mother's previous live births or other previous pregnancy terminations. Such information was useful in tracking trends in intervals between successive births or pregnancies, especially for high-risk women. Although parental educational attainment is considered one of the best measures of socioeconomic status (Mathews and Ventura 1997), data is now collected only for the mother, not the father. The panel that has just completed its evaluation of the U.S. Standard Certificate of Live Birth has recommended that these and other items be included in the revision expected to take effect after 2003, thereby signaling the continued importance of the items from a public health perspective (figure 2). Decisions will have to be made as to whether resources are sufficient to collect this information as part of the national vital statistics data system.

Another area that has suffered as a consequence of resource constraints may be less tangible but is nonetheless extremely important when comparing data across states or smaller geographic areas: data quality. NCHS prepares manuals with coding instructions and editing procedures, and it prepares and teaches statistics and registration methods courses to state vital statistics personnel throughout the year. The efforts are all designed to help ensure high-quality data. Over the years, NCHS has worked hard to provide technical and other assistance to the states to maintain and enhance the quality and timeliness of their data. In fact, over the past few years, NCHS has inaugurated a new statistical series based on large samples of births and deaths. The series provides a snapshot of the latest national trends in teen birth rates, receipt of prenatal care, and proportions of nonmarital births, among other important topics, and the data are published within about eight months after the end of a data year (Curtin and Martin 2000).

Because the state health departments have also seen their funding cut, the states' own efforts to monitor data quality, to provide technical assistance to hospital staff, and to query questionable data have been cut back. As electronic birth registration becomes virtually universal—it is currently in use for more than 95 percent of all U.S. births—the need to monitor data for quality, accuracy, and reliability will only increase.

In summary, the birth certificate remains the nation's most reliable and consistent source of data for tracking important aspects of childbearing in the United States at the national, state, and local level. The collaborative effort between NCHS and the state health departments must be

strengthened and enhanced. Birth certificate data are a national treasure that we must nurture and support.

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Table 1. Number, rate and percent of births to unmarried women and birth rate for married women: United States, 1940-99				
Year	Number of births to unmarried women	Percent of all births to unmarried women	Birth rate per 1,000 unmarried women 15-44	Birth rate per 1,000 married women 15-44
1999	1,308,560	33.0	44.4	86.5
1998	1,293,567	32.8	44.3	85.7
1997	1,257,444	32.4	44.0	84.3
1996	1,260,306	32.4	44.8	83.7
1995	1,253,976	32.2	45.1	83.7
1994	1,289,592	32.6	46.9	83.8
1993	1,240,172	31.0	45.3	86.8
1992	1,224,876	30.1	45.2	89.0
1991	1,213,769	29.5	45.2	89.9
1990	1,165,384	28.0	43.8	93.2
1989	1,094,169	27.1	41.6	91.9
1988	1,005,299	25.7	38.5	90.8
1987	933,013	24.5	36.0	90.0
1986	878,477	23.4	34.2	90.7
1985	828,174	22.0	32.8	93.3
1984	770,355	21.0	31.0	93.1
1983	737,893	20.3	30.3	93.6
1982	715,227	19.4	30.0	96.2
1981	686,605	18.9	29.5	96.0
1980	665,747	18.4	29.4	97.0
1979	597,800	17.1	27.2	96.4
1978	543,900	16.3	25.7	93.6
1977	515,700	15.5	25.6	94.9
1976	468,100	14.8	24.3	91.6
1975	447,900	14.3	24.5	92.1
1974	418,100	13.2	23.9	94.2
1973	407,300	13.0	24.3	94.7
1972	403,200	12.4	24.8	100.8
1971	401,400	11.3	25.5	113.2
1970	398,700	10.7	26.4	121.1
1969	360,800	10.0	24.8	118.8
1968	339,200	9.7	24.3	116.6
1967	318,100	9.0	23.7	118.7
1966	302,400	8.4	23.3	123.6
1965	291,200	7.7	23.4	130.2
1964	275,700	6.9	23.0	141.8

2: Vital Statistics Data

Year	Number of births to unmarried women	Percent of all births to unmarried women	Birth rate per 1,000 unmarried women 15-44	Birth rate per 1,000 married women 15-44
1963	259,400	6.3	22.5	145.9
1962	245,100	5.9	21.9	150.8
1961	240,200	5.6	22.7	155.8
1960	224,300	5.3	21.6	156.6
1959	220,600	5.2	21.9	---
1958	208,700	5.0	21.2	---
1957	201,700	4.7	21.0	---
1956	193,500	4.7	20.4	---
1955	183,300	4.5	19.3	153.7
1954	176,600	4.4	18.7	---
1953	160,800	4.1	16.9	---
1952	150,300	3.9	15.8	---
1951	146,500	3.9	15.1	---
1950	141,600	4.0	14.1	141.0
1949	133,200	3.7	13.3	---
1948	129,700	3.7	12.5	---
1947	131,900	3.6	12.1	---
1946	125,200	3.8	10.9	---
1945	117,400	4.3	10.1	---
1944	105,200	3.8	9.0	---
1943	98,100	3.3	8.3	---
1942	95,500	3.4	8.0	---
1941	95,700	3.8	7.8	---
1940	89,500	3.8	7.1	---

--- Data not available.

Source: National Vital Statistics System, National Center for Health Statistics, CDC, HHS.

Figure 1: U.S. Standard Certificate of Live Birth

U.S. STANDARD CERTIFICATE OF LIVE BIRTH

LOCAL FILE NUMBER BIRTH NUMBER

TYPE/PRINT IN PERMANENT BLACK INK FOR INSTRUCTIONS SEE HANDBOOK	1 CHILD'S NAME (First, Middle, Last)	2 DATE OF BIRTH (Month, Day, Year)	3 TIME OF BIRTH M
CHILD	4 SEX	5 CITY, TOWN, OR LOCATION OF BIRTH	6 COUNTY OF BIRTH
	7 PLACE OF BIRTH: <input type="checkbox"/> Hospital; <input type="checkbox"/> Freestanding Birthing Center; <input type="checkbox"/> Clinic/Doctor's Office; <input type="checkbox"/> Residence; <input type="checkbox"/> Other (Specify):		8 FACILITY NAME (If not institution, give street and number)
CERTIFIER/ ATTENDANT	9 I certify that this child was born alive at the place and time and on the date stated. Signature: _____	10 DATE SIGNED (Month, Day, Year)	11 ATTENDANT'S NAME AND TITLE (If other than certifier) (Type-Print) Name: _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify):
	12 CERTIFIER'S NAME AND TITLE (Type-Print) Name: _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Hospital Admin. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify):	13 ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route Number, City or Town, State, Zip Code)	
MOTHER	14 REGISTRAR'S SIGNATURE: _____	15 DATE FILED BY REGISTRAR (Month, Day, Year)	
	16a MOTHER'S NAME (First, Middle, Last)	16b MAIDEN SURNAME	17 DATE OF BIRTH (Month, Day, Year)
FATHER	18 BIRTHPLACE (State or Foreign Country)	19a RESIDENCE—STATE	19b COUNTY
	19c CITY, TOWN, OR LOCATION	19d STREET AND NUMBER	19e INSIDE CITY LIMITS? (Yes or no)
INFORMANT	20 MOTHER'S MAILING ADDRESS (If same as residence, enter Zip Code only)		21 FATHER'S NAME (First, Middle, Last)
	22 DATE OF BIRTH (Month, Day, Year)	23 BIRTHPLACE (State or Foreign Country)	
24 I certify that the personal information provided on this certificate is correct to the best of my knowledge and belief. Signature of Parent or Other Informant: _____			
INFORMATION FOR MEDICAL AND HEALTH USE ONLY			
MOTHER	25 OF HISPANIC ORIGIN? (Specify No or Yes—if yes, specify Cuban, Mexican, Puerto Rican, etc.)	26 RACE—American Indian, Black, White, etc. (Specify below)	27 EDUCATION (Specify only highest grade completed) Elementary, Secondary (1-12) College (1-4 or 5-)
	25a <input type="checkbox"/> No <input type="checkbox"/> Yes Specify:	26a	27a
FATHER	25b <input type="checkbox"/> No <input type="checkbox"/> Yes Specify:	26b	27b
	28 PREGNANCY HISTORY (Complete each section)		29 MOTHER MARRIED? (At birth, conception, or any time between) (Yes or no)
MULTIPLE BIRTHS Enter State File Number for MAJOR LIVE BIRTH(S)	LIVE BIRTHS (Do not include this child)		30 DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)
	28a. Now Living Number: _____ <input type="checkbox"/> None	28b. Now Dead Number: _____ <input type="checkbox"/> None	28c. DATE OF LAST LIVE BIRTH (Month, Year)
FETAL DEATH(S)	OTHER TERMINATIONS (Spontaneous and induced at any time after conception)		31 MONTH OF PREGNANCY PRENATAL CARE BEGAN—First, Second, Third, etc. (Specify)
	28d. _____ <input type="checkbox"/> None	28e. DATE OF LAST OTHER TERMINATION (Month, Year)	32 PRENATAL VISITS—Total Number (If none, so state)
33 BIRTH WEIGHT (Specify unit)		34 CLINICAL ESTIMATE OF GESTATION (Weeks)	35a PLURALITY—Single, Twin, Triplet, etc. (Specify)
36 APGAR SCORE		35b IF NOT SINGLE BIRTH—Born First, Second, Third, etc. (Specify)	
36a. 1 Minute	36b. 5 Minutes	37a. MOTHER TRANSFERRED PRIOR TO DELIVERY? <input type="checkbox"/> No <input type="checkbox"/> Yes. If Yes, enter name of facility transferred from:	
		37b. INFANT TRANSFERRED? <input type="checkbox"/> No <input type="checkbox"/> Yes. If Yes, enter name of facility transferred to:	

Figure 1 Continued: U.S. Standard Certificate of Live Birth

DEPARTMENT OF HEALTH AND HUMAN SERVICES - PUBLIC HEALTH SERVICE - CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR HEALTH STATISTICS - PHIS RENOVATION

<p>38a. MEDICAL RISK FACTORS FOR THIS PREGNANCY <i>(Check all that apply)</i></p> <p>Anemia (Hct < 30/Hgb < 10) 01 <input type="checkbox"/></p> <p>Cardiac disease 02 <input type="checkbox"/></p> <p>Acute or chronic lung disease 03 <input type="checkbox"/></p> <p>Diabetes 04 <input type="checkbox"/></p> <p>Genital herpes 05 <input type="checkbox"/></p> <p>Hydramnios/Oligohydramnios 06 <input type="checkbox"/></p> <p>Hemoglobinopathy 07 <input type="checkbox"/></p> <p>Hypertension, chronic 08 <input type="checkbox"/></p> <p>Hypertension, pregnancy-associated 09 <input type="checkbox"/></p> <p>Eclampsia 10 <input type="checkbox"/></p> <p>Incompetent cervix 11 <input type="checkbox"/></p> <p>Previous infant 4000+ grams 12 <input type="checkbox"/></p> <p>Previous preterm or small for gestational age infant 13 <input type="checkbox"/></p> <p>Renal disease 14 <input type="checkbox"/></p> <p>Rh sensitization 15 <input type="checkbox"/></p> <p>Uterine bleeding 16 <input type="checkbox"/></p> <p>None 00 <input type="checkbox"/></p> <p>Other _____ 17 <input type="checkbox"/></p> <p><i>(Specify)</i></p>	<p>40. COMPLICATIONS OF LABOR AND/OR DELIVERY <i>(Check all that apply)</i></p> <p>Febrie (> 100°F or 38°C) 01 <input type="checkbox"/></p> <p>Meconium, moderate/heavy 02 <input type="checkbox"/></p> <p>Premature rupture of membrane (> 12 hours) 03 <input type="checkbox"/></p> <p>Abruptio placenta 04 <input type="checkbox"/></p> <p>Placenta previa 05 <input type="checkbox"/></p> <p>Other excessive bleeding 06 <input type="checkbox"/></p> <p>Seizures during labor 07 <input type="checkbox"/></p> <p>Precipitous labor (< 3 hours) 08 <input type="checkbox"/></p> <p>Prolonged labor (> 20 hours) 09 <input type="checkbox"/></p> <p>Dysfunctional labor 10 <input type="checkbox"/></p> <p>Breech/Malpresentation 11 <input type="checkbox"/></p> <p>Cephalopelvic disproportion 12 <input type="checkbox"/></p> <p>Cord prolapse 13 <input type="checkbox"/></p> <p>Anesthetic complications 14 <input type="checkbox"/></p> <p>Fatal distress 15 <input type="checkbox"/></p> <p>None 00 <input type="checkbox"/></p> <p>Other _____ 16 <input type="checkbox"/></p> <p><i>(Specify)</i></p>	<p>43. CONGENITAL ANOMALIES OF CHILD <i>(Check all that apply)</i></p> <p>Anencephalus 01 <input type="checkbox"/></p> <p>Spina bifida/Meningocele 02 <input type="checkbox"/></p> <p>Hydrocephalus 03 <input type="checkbox"/></p> <p>Microcephalus 04 <input type="checkbox"/></p> <p>Other central nervous system anomalies <i>(Specify)</i> _____ 05 <input type="checkbox"/></p> <p>Heart malformations 06 <input type="checkbox"/></p> <p>Other circulatory/respiratory anomalies <i>(Specify)</i> _____ 07 <input type="checkbox"/></p> <p>Rectal atresia/stenosis 08 <input type="checkbox"/></p> <p>Tracheo-esophageal fistula/Esophageal atresia 09 <input type="checkbox"/></p> <p>Omphalocele/Gastroschisis 10 <input type="checkbox"/></p> <p>Other gastrointestinal anomalies <i>(Specify)</i> _____ 11 <input type="checkbox"/></p> <p>Malformed genitalia 12 <input type="checkbox"/></p> <p>Renal agenesis 13 <input type="checkbox"/></p> <p>Other urogenital anomalies <i>(Specify)</i> _____ 14 <input type="checkbox"/></p> <p>Cleft lip/palate 15 <input type="checkbox"/></p> <p>Polydactyl(y)/Syndactyl(y)/Adactyl(y) 16 <input type="checkbox"/></p> <p>Club foot 17 <input type="checkbox"/></p> <p>Diaphragmatic hernia 18 <input type="checkbox"/></p> <p>Other musculoskeletal/integumental anomalies <i>(Specify)</i> _____ 19 <input type="checkbox"/></p> <p>Down's syndrome 20 <input type="checkbox"/></p> <p>Other chromosomal anomalies <i>(Specify)</i> _____ 21 <input type="checkbox"/></p> <p>None 00 <input type="checkbox"/></p> <p>Other _____ 22 <input type="checkbox"/></p> <p><i>(Specify)</i></p>
<p>38b. OTHER RISK FACTORS FOR THIS PREGNANCY <i>(Complete all items)</i></p> <p>Tobacco use during pregnancy Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Average number cigs./rettes per day _____</p> <p>Alcohol use during pregnancy Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Average number drinks per week _____</p> <p>Weight gained during pregnancy _____ lbs.</p>	<p>41. METHOD OF DELIVERY <i>(Check all that apply)</i></p> <p>Vaginal 01 <input type="checkbox"/></p> <p>Vaginal birth after previous C section 02 <input type="checkbox"/></p> <p>Primary C section 03 <input type="checkbox"/></p> <p>Repeat C section 04 <input type="checkbox"/></p> <p>Forceps 05 <input type="checkbox"/></p> <p>Vacuum 06 <input type="checkbox"/></p>	
<p>39. OBSTETRIC PROCEDURES <i>(Check all that apply)</i></p> <p>Amniocentesis 01 <input type="checkbox"/></p> <p>Electronic fetal monitoring 02 <input type="checkbox"/></p> <p>Induction of labor 03 <input type="checkbox"/></p> <p>Stimulation of labor 04 <input type="checkbox"/></p> <p>Tocolysis 05 <input type="checkbox"/></p> <p>Ultrasound 06 <input type="checkbox"/></p> <p>None 00 <input type="checkbox"/></p> <p>Other _____ 07 <input type="checkbox"/></p> <p><i>(Specify)</i></p>	<p>42. ABNORMAL CONDITIONS OF THE NEWBORN <i>(Check all that apply)</i></p> <p>Anemia (Hct < 39/Hgb < 13) 01 <input type="checkbox"/></p> <p>Birth injury 02 <input type="checkbox"/></p> <p>Fetal alcohol syndrome 03 <input type="checkbox"/></p> <p>Hyaline membrane disease/RDS 04 <input type="checkbox"/></p> <p>Meconium aspiration syndrome 05 <input type="checkbox"/></p> <p>Assisted ventilation < 30 min 06 <input type="checkbox"/></p> <p>Assisted ventilation ≥ 30 min 07 <input type="checkbox"/></p> <p>Seizures 08 <input type="checkbox"/></p> <p>None 00 <input type="checkbox"/></p> <p>Other _____ 09 <input type="checkbox"/></p> <p><i>(Specify)</i></p>	

CDC 64 91
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Figure 2

U.S. STANDARD CERTIFICATE OF LIVE BIRTH

LOCAL FILE NO.	BIRTH NUMBER:						
C H I L D	1. CHILD'S NAME (First, Middle, Last, Suffix)			2. TIME OF BIRTH	3. SEX	4. DATE OF BIRTH (Mo/Day/Yr)	
	5. FACILITY NAME (If not institution, give street and number)			6. CITY, TOWN, OR LOCATION OF BIRTH		7. COUNTY OF BIRTH	
M O T H E R	8a. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			8b. DATE OF BIRTH (Mo/Day/Yr)			
	8c. MOTHER'S NAME PRIOR TO FIRST MARRIAGE (First, Middle, Last, Suffix)			8d. BIRTHPLACE (State, Territory, or Foreign Country)			
	9a. RESIDENCE OF MOTHER-STATE		9b. COUNTY		9c. CITY, TOWN, OR LOCATION		
	9d. STREET AND NUMBER			9e. APT. NO.	9f. ZIP CODE		9g. INSIDE CITY LIMITS? <input type="checkbox"/> Yes <input type="checkbox"/> No
F A T H E R	10a. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			10b. DATE OF BIRTH (Mo/Day/Yr)		10c. BIRTHPLACE (State, Territory, or Foreign Country)	
	11. CERTIFIER'S NAME: _____ TITLE: <input type="checkbox"/> MD <input type="checkbox"/> DO <input type="checkbox"/> HOSPITAL ADMIN. <input type="checkbox"/> CNM/CM <input type="checkbox"/> OTHER MIDWIFE <input type="checkbox"/> OTHER (Specify) _____			12. DATE CERTIFIED ____/____/____		13. DATE FILED BY REGISTRAR ____/____/____	
INFORMATION FOR ADMINISTRATIVE USE							
M O T H E R	14. MOTHER'S MAILING ADDRESS: <input type="checkbox"/> Same as residence, or: State: _____ City, Town, or Location: _____						
	Street & Number: _____			Apartment No.: _____		Zip Code: _____	
15. MOTHER MARRIED? (At birth, conception, or any time between) <input type="checkbox"/> Yes <input type="checkbox"/> No IF NO, HAS PATERNITY ACKNOWLEDGEMENT BEEN SIGNED IN THE HOSPITAL? <input type="checkbox"/> Yes <input type="checkbox"/> No				16. SOCIAL SECURITY NUMBER REQUESTED FOR CHILD? <input type="checkbox"/> Yes <input type="checkbox"/> No		17. FACILITY ID. (NPI)	
18. MOTHER'S SOCIAL SECURITY NUMBER:				19. FATHER'S SOCIAL SECURITY NUMBER:			
INFORMATION FOR MEDICAL AND HEALTH PURPOSES ONLY							
M O T H E R	20. MOTHER'S EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery)		21. MOTHER OF HISPANIC ORIGIN? (Check the box that best describes whether the mother is Spanish/Hispanic/Latina. Check the "No" box if mother is not Spanish/Hispanic/Latina)		22. MOTHER'S RACE (Check one or more races to indicate what the mother considers herself to be)		
	<input type="checkbox"/> 8th grade or less <input type="checkbox"/> 9th - 12th grade, no diploma <input type="checkbox"/> High school graduate or GED completed <input type="checkbox"/> Some college credit but no degree <input type="checkbox"/> Associate degree (e.g., AA, AS) <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS) <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)		<input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican, Mexican American, Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____		<input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribe) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____		

DRAFT 07/10/2001

FATHER Mother's Name _____ Mother's Medical Record No. _____	23. FATHER'S EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery) <input type="checkbox"/> 8th grade or less <input type="checkbox"/> 9th - 12th grade, no diploma <input type="checkbox"/> High school graduate or GED completed <input type="checkbox"/> Some college credit but no degree <input type="checkbox"/> Associate degree (e.g., AA, AS) <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS) <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)	24. FATHER OF HISPANIC ORIGIN? (Check the box that best describes whether the father is Spanish/Hispanic/Latino. Check the "No" box if mother is not Spanish/Hispanic/Latino) <input type="checkbox"/> No, not Spanish/Hispanic/Latino <input type="checkbox"/> Yes, Mexican, Mexican American, Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify) _____	25. FATHER'S RACE (Check one or more races to indicate what the father considers himself to be) <input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribe) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander (Specify) _____ (Specify) _____
	26. PLACE WHERE BIRTH OCCURRED (Check one) <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding birthing center <input type="checkbox"/> Home Birth: Planned to deliver at home? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Clinic/Doctor's office <input type="checkbox"/> Other (Specify) _____	27. ATTENDANT'S NAME, TITLE, AND NPI NAME: _____ NPI: _____ TITLE: <input type="checkbox"/> MD <input type="checkbox"/> DO <input type="checkbox"/> CNM/CM <input type="checkbox"/> OTHER MIDWIFE <input type="checkbox"/> OTHER (Specify) _____	28. MOTHER TRANSFERRED FOR MATERNAL MEDICAL OR FETAL INDICATIONS FOR DELIVERY? <input type="checkbox"/> Yes <input type="checkbox"/> No IF YES, ENTER NAME OF FACILITY MOTHER TRANSFERRED FROM: _____

MOTHER	29a. DATE OF FIRST PRENATAL CARE VISIT MM / DD / YYYY <input type="checkbox"/> No Prenatal Care		29b. DATE OF LAST PRENATAL CARE VISIT MM / DD / YYYY		30. TOTAL NUMBER OF PRENATAL VISITS FOR THIS PREGNANCY _____ (If none, enter "0".)	
	31. MOTHER'S HEIGHT _____ (inches)	32. MOTHER'S PREPREGNANCY WEIGHT _____ (pounds)	33. MOTHER'S WEIGHT AT DELIVERY _____ (pounds)		34. DID MOTHER GET WIC FOOD FOR HERSELF DURING THIS PREGNANCY? <input type="checkbox"/> Yes <input type="checkbox"/> No	
	35. NUMBER OF PREVIOUS LIVE BIRTHS (Do not include this child) 35a. Now Living Number _____ <input type="checkbox"/> None	35b. Now Dead Number _____ <input type="checkbox"/> None	36a. Other Outcomes Number _____ <input type="checkbox"/> None	37. CIGARETTE SMOKING BEFORE AND DURING PREGNANCY For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked. IF NONE, ENTER "0". Average number of cigarettes or packs of cigarettes smoked per day. # of cigarettes OR # of packs Three Months Before Pregnancy _____ OR _____ First Three Months of Pregnancy _____ OR _____ Second Three Months of Pregnancy _____ OR _____ Last Three Months of Pregnancy _____ OR _____		38. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY <input type="checkbox"/> Private Insurance <input type="checkbox"/> Medicaid <input type="checkbox"/> Self-pay <input type="checkbox"/> Other (Specify) _____
	35c. DATE OF LAST LIVE BIRTH MM / YYYY	36b. DATE OF LAST OTHER PREGNANCY OUTCOME MM / YYYY	39. DATE LAST NORMAL MENSES BEGAN MM / DD / YYYY		40. MOTHER'S MEDICAL RECORD NUMBER	

MEDICAL AND HEALTH INFORMATION	<p>41. RISK FACTORS IN THIS PREGNANCY (Check all that apply)</p> <p>Diabetes</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prepregnancy (Diagnosis prior to this pregnancy) <input type="checkbox"/> Gestational (Diagnosis in this pregnancy) <p>Hypertension</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia, eclampsia) <ul style="list-style-type: none"> <input type="checkbox"/> Previous preterm birth <input type="checkbox"/> Other previous poor pregnancy outcome (Includes, perinatal death, small-for-gestational age/intrauterine growth restricted birth) <input type="checkbox"/> Vaginal bleeding during this pregnancy prior to the onset of labor <input type="checkbox"/> Pregnancy resulted from infertility treatment <input type="checkbox"/> Mother had a previous cesarean delivery If yes, how many _____ <input type="checkbox"/> None of the above 	<p>44. ONSET OF LABOR (Check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Premature Rupture of the Membranes (prolonged, ≥ 12 hrs.) <input type="checkbox"/> Precipitous Labor (<3 hrs.) <input type="checkbox"/> Prolonged Labor (≥ 20 hrs.) 	<p>46. METHOD OF DELIVERY</p> <p>A. Was delivery with forceps attempted but unsuccessful?</p> <p style="padding-left: 20px;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>B. Was delivery with vacuum extraction attempted but unsuccessful?</p> <p style="padding-left: 20px;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>C. Fetal presentation at birth</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other <p>D. Final route and method of delivery (Check one)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Vaginal/Spontaneous <input type="checkbox"/> Vaginal/Forceps <input type="checkbox"/> Vaginal/Vacuum <input type="checkbox"/> Cesarean If cesarean, was a trial of labor attempted? <input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>42. INFECTIONS PRESENT AND/OR TREATED DURING THIS PREGNANCY (Check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Gonorrhea <input type="checkbox"/> Syphilis <input type="checkbox"/> Herpes Simplex Virus (HSV) <input type="checkbox"/> Chlamydia <input type="checkbox"/> Hepatitis B <input type="checkbox"/> Hepatitis C <input type="checkbox"/> None of the above 	<p>45. CHARACTERISTICS OF LABOR AND DELIVERY</p> <ul style="list-style-type: none"> <input type="checkbox"/> Induction of labor <input type="checkbox"/> Augmentation of labor <input type="checkbox"/> Non-vertex presentation <input type="checkbox"/> Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery <input type="checkbox"/> Antibiotics received by the mother during labor <input type="checkbox"/> Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥38°C (100.4°F) <input type="checkbox"/> Moderate/heavy meconium staining of the amniotic fluid <input type="checkbox"/> Fetal intolerance of labor such that one or more of the following actions was taken: in-utero resuscitative measures, further fetal assessment, or operative delivery <input type="checkbox"/> Epidural or spinal anesthesia during labor <input type="checkbox"/> None of the above 	<p>47. MATERNAL MORBIDITY (Check all that apply) (Complications associated with labor and delivery)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Maternal transfusion <input type="checkbox"/> Third or fourth degree perineal laceration <input type="checkbox"/> Ruptured uterus <input type="checkbox"/> Unplanned hysterectomy <input type="checkbox"/> Admission to intensive care unit <input type="checkbox"/> Unplanned operating room procedure following delivery <input type="checkbox"/> None of the above
	<p>43. OBSTETRIC PROCEDURES (Check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cervical cerclage <input type="checkbox"/> Tocolysis <p>External cephalic version:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Successful <input type="checkbox"/> Failed <input type="checkbox"/> None of the above 	NEWBORN INFORMATION	

NEWBORN	<p>48. NEWBORN MEDICAL RECORD NUMBER: _____</p>	<p>54. ABNORMAL CONDITIONS OF THE NEWBORN (Check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Assisted ventilation required immediately following delivery <input type="checkbox"/> Assisted ventilation required for more than six hours <input type="checkbox"/> NICU admission <input type="checkbox"/> Newborn given surfactant replacement therapy <input type="checkbox"/> Antibiotics received by the newborn for suspected neonatal sepsis <input type="checkbox"/> Seizure or serious neurologic dysfunction <input type="checkbox"/> Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention) <input type="checkbox"/> None of the above 	<p>55. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Anencephaly <input type="checkbox"/> Meningocele/Spina bifida <input type="checkbox"/> Cyanotic congenital heart disease <input type="checkbox"/> Congenital diaphragmatic hernia <input type="checkbox"/> Omphalocele <input type="checkbox"/> Gastroschisis <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes) <input type="checkbox"/> Cleft Lip with or without Cleft Palate <input type="checkbox"/> Cleft Palate alone <input type="checkbox"/> Down Syndrome <ul style="list-style-type: none"> <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending <input type="checkbox"/> Suspected chromosomal disorder <ul style="list-style-type: none"> <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending <input type="checkbox"/> Hypospadias <input type="checkbox"/> None of the anomalies listed above
	<p>49. BIRTHWEIGHT (grams preferred, specify unit)</p> <p style="padding-left: 20px;">_____</p> <p style="padding-left: 40px;"><input type="checkbox"/> grams <input type="checkbox"/> lb/oz</p>	<p>56. WAS INFANT TRANSFERRED WITHIN 24 HOURS OF DELIVERY? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>IF YES, NAME OF FACILITY INFANT TRANSFERRED TO: _____</p>	
	<p>50. OBSTETRIC ESTIMATE OF GESTATION: _____ (completed weeks)</p>	<p>57. IS INFANT LIVING AT TIME OF REPORT? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Infant transferred, status unknown</p>	
	<p>51. APGAR SCORE:</p> <p>Score at 5 minutes: _____</p> <p>If 5 minute score is less than 6,</p> <p>Score at 10 minutes: _____</p>	<p>58. IS INFANT BEING BREASTFED? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	
	<p>52. PLURALITY - Single, Twin, Triplet, etc. (Specify) _____</p>	<p>59. IF NOT SINGLE BIRTH - Born First, Second, Third, etc. (Specify) _____</p>	
	<p>53. IF NOT SINGLE BIRTH - Born First, Second, Third, etc. (Specify) _____</p>	<p>60. _____</p>	

DRAFT 07/10/2001

Mother's Name _____
Mother's Medical Record No. _____

Figure 3: U.S. Standard Licence and Certificate of Marriage

**U.S. STANDARD
LICENSE AND CERTIFICATE OF MARRIAGE**

LICENSE NUMBER STATE FILE NUMBER

**TYPE/PRINT
IN
PERMANENT
BLACK INK
FOR
INSTRUCTIONS
SEE
HANDBOOK**

GROOM	1. GROOM'S NAME (First, Middle, Last)		2. AGE LAST BIRTHDAY			
	3a. RESIDENCE—CITY, TOWN, OR LOCATION		3b. COUNTY			
	3c. STATE	4. BIRTHPLACE (State or Foreign Country)	5. DATE OF BIRTH (Month, Day, Year)			
BRIDE	6a. FATHER'S NAME (First, Middle, Last)		6b. BIRTHPLACE (State or Foreign Country)	7a. MOTHER'S NAME (First, Middle, Maiden Surname)	7b. BIRTHPLACE (State or Foreign Country)	
	8a. BRIDE'S NAME (First, Middle, Last)		8b. MAIDEN SURNAME (if different)		9. AGE LAST BIRTHDAY	
	10a. RESIDENCE—CITY, TOWN, OR LOCATION		10b. COUNTY			
SIGNATURES	WE HEREBY CERTIFY THAT THE INFORMATION PROVIDED IS CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF AND THAT WE ARE FREE TO MARRY UNDER THE LAWS OF THIS STATE.					
	15. GROOM'S SIGNATURE		16. BRIDE'S SIGNATURE			
	This License Authorizes the Marriage in This State of the Parties Named Above By Any Person Duly Authorized to Perform a Marriage Ceremony Under the Laws of the State of _____				17. EXPIRATION DATE (Month, Day, Year)	
LICENSE TO MARRY	18. SUBSCRIBED TO AND SWORN TO BEFORE ME ON: (Month, Day, Year)		19. SIGNATURE OF ISSUING OFFICIAL		20. TITLE OF ISSUING OFFICIAL	
	21. I CERTIFY THAT THE ABOVE NAMED PERSONS WERE MARRIED ON: (Month, Day, Year)		22a. WHERE MARRIED—CITY, TOWN, OR LOCATION		22b. COUNTY	
CEREMONY	23a. SIGNATURE OF PERSON PERFORMING CEREMONY		23b. NAME (Type/Print)		23c. TITLE	
	23d. ADDRESS OF PERSON PERFORMING CEREMONY (Street and Number or Rural Route Number, City or Town, State, Zip Code)					
LOCAL OFFICIAL	24a. SIGNATURE OF WITNESS TO CEREMONY		24b. SIGNATURE OF WITNESS TO CEREMONY			
	25. SIGNATURE OF LOCAL OFFICIAL MAKING RETURN TO STATE HEALTH DEPARTMENT			26. DATE FILED BY LOCAL OFFICIAL (Month, Day, Year)		
CONFIDENTIAL INFORMATION. THE INFORMATION BELOW WILL NOT APPEAR ON CERTIFIED COPIES OF THE RECORD.						
GROOM	27. NUMBER OF THIS MARRIAGE—First, Second, etc. (Specify below)	28. IF PREVIOUSLY MARRIED, LAST MARRIAGE ENDED		29. RACE—American Indian, Black, White, etc. (Specify below)	30. EDUCATION (Specify only highest grade completed)	
		By Death, Divorce, Dissolution, or Annulment (Specify below)	Date (Month, Day, Year)		Elementary/Secondary (1-12)	College (1-4 or 5+)
BRIDE	27b.	28a.	28b.	29a.	30a.	
		28c.	28d.	29b.	30b.	

DEPARTMENT OF HEALTH AND HUMAN SERVICES — PUBLIC HEALTH SERVICE — NATIONAL CENTER FOR HEALTH STATISTICS — 1989 REVISION

PHS T 004
REV. 1/89

Figure 4: U.S. Standard Certificate of Divorce, Dissolution of Marriage, or Annulment

**U.S. STANDARD
CERTIFICATE OF DIVORCE, DISSOLUTION
OF MARRIAGE, OR ANNULMENT**

COURT FILE NUMBER _____ STATE FILE NUMBER _____

HUSBAND

1. HUSBAND'S NAME (First, Middle, Last) _____

2a. RESIDENCE—CITY, TOWN, OR LOCATION _____ 2b. COUNTY _____

2c. STATE _____ 3. BIRTHPLACE (State or Foreign Country) _____ 4. DATE OF BIRTH (Month, Day, Year) _____

WIFE

5a. WIFE'S NAME (First, Middle, Last) _____ 5b. MAIDEN SURNAME _____

6a. RESIDENCE—CITY, TOWN, OR LOCATION _____ 6b. COUNTY _____

6c. STATE _____ 7. BIRTHPLACE (State or Foreign Country) _____ 8. DATE OF BIRTH (Month, Day, Year) _____

MARRIAGE

9a. PLACE OF THIS MARRIAGE—CITY, TOWN, OR LOCATION _____ 9b. COUNTY _____ 9c. STATE OR FOREIGN COUNTRY _____ 10. DATE OF THIS MARRIAGE (Month, Day, Year) _____

11. DATE COUPLE LAST RESIDED IN SAME HOUSEHOLD (Month, Day, Year) _____ 12. NUMBER OF CHILDREN UNDER 18 IN THIS HOUSEHOLD AS OF THE DATE IN ITEM 11
Number _____ None 13. PETITIONER
 Husband Wife Both
 Other (Specify) _____

ATTORNEY

14a. NAME OF PETITIONER'S ATTORNEY (Type/Print) _____ 14b. ADDRESS (Street and Number or Rural Route Number, City or Town, State, Zip Code) _____

DECREE

15. I CERTIFY THAT THE MARRIAGE OF THE ABOVE NAMED PERSONS WAS DISSOLVED ON: (Month, Day, Year) _____ 16. TYPE OF DECREE—Divorce, Dissolution, or Annulment (Specify) _____ 17. DATE RECORDED (Month, Day, Year) _____

18. NUMBER OF CHILDREN UNDER 18 WHOSE PHYSICAL CUSTODY WAS AWARDED TO:
Husband _____ Wife _____
Joint (Husband/Wife) _____ Other _____
 No children

19. COUNTY OF DECREE _____ 20. TITLE OF COURT _____

21. SIGNATURE OF CERTIFYING OFFICIAL _____ 22. TITLE OF CERTIFYING OFFICIAL _____ 23. DATE SIGNED (Month, Day, Year) _____

CONFIDENTIAL INFORMATION. THE INFORMATION BELOW WILL NOT APPEAR ON CERTIFIED COPIES OF THE RECORD.

24. NUMBER OF THIS MARRIAGE—First, Second, etc. (Specify below)	25. IF PREVIOUSLY MARRIED, LAST MARRIAGE ENDED		26. RACE—American Indian, Black, White, etc. (Specify below)	27. EDUCATION (Specify only highest grade completed)	
	By Death, Divorce, Dissolution, or Annulment (Specify below)	Date (Month, Day, Year)		Elementary/Secondary (10/12)	College (1-4 or 5-)
HUSBAND 24a.	25a.	25b.	26a.	27a.	
WIFE 24b.	25c.	25d.	26b.	27b.	

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE NATIONAL CENTER FOR HEALTH STATISTICS 1988 REVISION

Figure 5: U.S. Standard Report of Induced Termination of Pregnancy

TYPE/PRINT
IN
PERMANENT
BLACK INK
FOR
INSTRUCTIONS
SEE
HANDBOOK

U.S. STANDARD
REPORT OF INDUCED TERMINATION OF PREGNANCY

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES - CENTERS FOR DISEASE CONTROL AND PREVENTION - NATIONAL CENTER FOR HEALTH STATISTICS - 1987 REVISION

STATE FILE NUMBER			
1. FACILITY NAME (if not clinic or hospital, give address)		2. CITY, TOWN, OR LOCATION OF PREGNANCY TERMINATION	
3. COUNTY OF PREGNANCY TERMINATION			
4. PATIENT'S IDENTIFICATION	5. AGE LAST BIRTHDAY	6. MARRIED? <input type="checkbox"/> YES <input type="checkbox"/> NO	7. DATE OF PREGNANCY TERMINATION (Month, Day, Year)
8a. RESIDENCE-STATE	8b. COUNTY	8c. CITY, TOWN, OR LOCATION	8d. INSIDE CITY LIMITS? <input type="checkbox"/> YES <input type="checkbox"/> NO
8e. ZIP CODE			
9. OF HISPANIC ORIGIN? (Specify No or Yes - if yes, specify Cuban, Mexican, Puerto Rican, etc.) <input type="checkbox"/> NO <input type="checkbox"/> YES Specify: _____		10. RACE <input type="checkbox"/> American Indian <input type="checkbox"/> Black <input type="checkbox"/> White <input type="checkbox"/> Other (Specify) _____	
		11. EDUCATION (Specify only highest grade completion)	
		Elementary/Secondary (0-12)	College (1-4 or 5+)
12. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)	13. CLINICAL ESTIMATE OF GESTATION (Weeks)	14. PREVIOUS PREGNANCIES (Complete each section)	
		LIVE BIRTHS	
		OTHER TERMINATIONS	
		14a. Now Living	14b. Now Dead
		14c. Spontaneous	14d. Induced (Do not include this termination)
		Number _____ <input type="checkbox"/> None	Number _____ <input type="checkbox"/> None
		Number _____ <input type="checkbox"/> None	Number _____ <input type="checkbox"/> None
15. TYPE OF TERMINATION PROCEDURE (Check only one)			
<input type="checkbox"/> Suction Curettage <input type="checkbox"/> Medical (Nonsurgical), Specify Medication(s) _____ <input type="checkbox"/> Dilation and Evacuation (D&E) <input type="checkbox"/> Intra-Uterine Instillation (Saline or Prostaglandin) <input type="checkbox"/> Sharp Curettage (D&C) <input type="checkbox"/> Hysterotomy/Hysterectomy <input type="checkbox"/> Other (Specify) _____			
16. NAME OF ATTENDING PHYSICIAN (Type/Print)		17. NAME OF PERSON COMPLETING THE REPORT (Type/Print)	

7-0725

3

Birth and Abortion Data

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Part of a forthcoming monograph
Data Needs for Measuring Family and Fertility Change After Welfare Reform
Douglas J. Besharov, Editor

3

Birth and Abortion Data *Stanley K. Henshaw**

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) set out a number of goals for a revised program of public assistance. One of the goals of the legislation was to reduce the rate of illegitimacy (i.e., nonmarital childbearing) without increasing the incidence of abortion. The federal government relied on the states to develop and implement policies to accomplish this legislative goal; the assumption was that states would experiment with a variety of different approaches to achieving those goals. The states' efforts would then be evaluated, and the most effective policies would be identified.

Some critics, however, were concerned that federal and state policies that reduced benefits for women with children could result in an increase in abortions. Any change that made child rearing more difficult for low-income women could tip the balance in favor of abortion in some cases. In particular, it was feared that eliminating additional payments for births that were conceived while the mother was receiving income support (a policy known as the *family cap*) would force pregnant welfare recipients to terminate a larger number of pregnancies. To encourage states to develop policies that reduce nonmarital childbearing without increasing abortions, PRWORA provides for an "illegitimacy bonus"—an annual award of \$20 million to \$25 million—to states that are among the top five in reducing the proportion of births to unmarried women and that have no increase in the ratio of abortions to births.

The legislation was based on the assumption that data are available to measure trends in nonmarital childbearing and abortion incidence at the state level. Perhaps equally important, data are needed to assess the effectiveness of policies and programs that might affect policy outcomes. Because the federal statute anticipates that states will experiment with various policies and identify the most effective ones, researchers must be able to examine trends within the population subgroups most affected by the policy: low-income women and those who rely on public welfare programs. Therefore, trends in nonmarital childbearing and abortion need to be measured for those subgroups as well as for the entire population of a state. Because many counties and cities have teen pregnancy initiatives and other programs intended to reduce nonmarital pregnancy, data also need to be available for small geographic areas within states.

Unfortunately, although birth data are relatively complete and accurate, the abortion data for many states are too flawed for adequate assessment of the small or even moderate-sized trends

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that are likely to be caused by state policies. Reporting of abortion data is incomplete in most states, with the degree of incompleteness varying from one year to another; not all of the data items needed for complete assessment of the impact of welfare policies are collected, even by most states with complete reporting; and one state, California, collects no data on induced abortion. In some states new legislation is needed, and in others, the statistical agencies need to enforce existing requirements. In addition, the measurement of the marital status of women giving birth is imperfect in a few states, and birth certificates do not provide some of the information needed to assess the effects of policy on certain subgroups.

This chapter describes the ways in which abortion and birth data are collected; discusses the completeness, accuracy, and limitations of the data; offers some explanations for the unevenness in the measurement of abortion; and suggests some options for improving data quality and usefulness.

Sources of Abortion Data

Abortion data are available from state agencies, the National Center for Health Statistics, the Alan Guttmacher Institute, and population surveys.

State statistics agencies. As of October 2000, 49 states and the District of Columbia collected data on the induced terminations of pregnancy, California being the only state with no reporting. In Alaska, Maryland, New Jersey, New Hampshire, West Virginia, and the District of Columbia, reporting is voluntary. Four states—Alaska, Iowa, New Hampshire, and Oklahoma—established reporting systems only after 1995, the base year PRWORA established for awarding the illegitimacy bonus. Before those systems were implemented, the Division of Reproductive Health of the Centers for Disease Control and Prevention (CDC) obtained an approximate count of the number of abortions by surveying the larger clinics and hospitals in the four states. For California, the CDC estimated the number of abortions from trends in the number that were funded by Medi-Cal (California's Medicaid program), the number reported by certain providers, and other information.

In states with mandatory reporting, physicians who perform abortions or the facilities in which abortions are performed are required by statute or regulation to file information about each induced abortion with the state health statistics agency, which is usually a unit of the state health department. The agencies computerize the information and produce summary tables of each year's data.

Some states publish a separate report of abortion statistics, some include abortion statistics in an annual vital statistics report, and a few only provide selected tables on request. Wyoming is the only state with reporting that releases no abortion data to the public; by statute, it will release data only to a public health authority or to a physician licensed in the state. The state abortion reports vary widely in the data and tabulations presented. Some give information for all abortions that occurred in the state, some provide data on the state's residents who had abortions in the state, and some provide data on the state's residents who had abortions either in the state or in

neighboring states that share this information. A few states make electronic data files containing information on each abortion available to researchers, with certain information suppressed to preserve the confidentiality of patients and abortion providers. In this form, the data permit types of analysis and program evaluation that are not possible with the published aggregate data.

Each year, the CDC asks the states to provide a uniform set of tabulations of the abortions that occurred in the state. Although cooperation is voluntary, most states supply the requested information to the extent possible. The CDC combines the state tabulations and publishes them annually as a surveillance report in its *Morbidity and Mortality Weekly Report Surveillance Summaries* (Koonin, Strauss, Chrisman, Montalbano, Bartlett, and Smith 1999). The reports contain statistics on the abortions occurring in each state as well as national totals. For each state with the data, the report publishes the number and percentage distribution of abortions by age, race, Hispanic ethnicity, marital status, number of prior births, number of prior abortions, weeks of gestation at which the abortion occurred, and procedure used to terminate the pregnancy.

National Center for Health Statistics (NCHS). From 1978 to around 1994, NCHS operated a cooperative abortion statistics program under which states whose abortion reporting met NCHS' quality standards submitted their data to NCHS in return for a payment to support their abortion-reporting activities. NCHS monitored the data for quality, reformatted each year's data into a single data set containing information on approximately 300,000 abortions, and published a report with detailed tables. Because of funding limitations, the program never expanded beyond 14 states, although other states with eligible reporting systems were interested in joining. The program ended around 1994 as a consequence of NCHS budget cuts. The last year for which the report was published was 1988 (Kochanek 1991), although the combined data sets were compiled through 1992.

The Alan Guttmacher Institute (AGI). Since 1974, AGI has periodically surveyed all hospitals, clinics, and physicians' offices where abortions are believed to be performed (Henshaw 1998). The original purpose of the surveys was to assess the availability of abortion services, but another important result was a count of the number of abortions performed. The surveys were conducted each year from 1974 through 1979, but less frequently thereafter because of their high cost and the effort required. After 1979, surveys were conducted in 1981, 1983, 1986, 1989, 1993, and 1997, and collected counts of abortions performed during the previous two years. The surveys have obtained data on the number of abortions and providers for all years from 1973 through 1996, except 1983, 1986, 1989, 1990, 1993, and 1994. AGI's surveys collect no information about the characteristics of the women having abortions except for the number past 12 weeks of gestation and, in some years, providers' estimates of the proportion of patients who live more than 100 miles and between 50 and 100 miles from the abortion facility.

Other surveys. A number of nationally representative household surveys have asked women for information about their reproductive history, including their abortion history. The most complete of these, the National Survey of Family Growth (NSFG), was fielded in 1982, 1988, and 1995 and is planned for 2001. Surveys before 1982, however, exclude never-married women without children and therefore cannot be used to measure abortion. The National Longitudinal

Survey of Youth also contains useful data on abortion. An advantage of the two surveys is that their content extends far beyond the limited demographic data collected by states to include questions on socioeconomic status, employment, marital history, receipt of public assistance, intention status of births, family structure, and many other items. Major disadvantages are that their sample sizes are not large enough to characterize geographic areas as small as a state and that abortions are seriously underreported. In the NSFG, for example, studies have calculated that abortions were underreported by 52 percent in 1982, 65 percent in 1988, and 41 percent in 1995 (Fu, Darroch, Henshaw, and Kolb 1998). Similar levels of underreporting have been found in other surveys. As a result, their usefulness for the analysis of abortion is limited even at the national level, and state-level analysis is impossible.

Quality of Abortion Data

AGI's abortion count is considered to be relatively complete because the researchers make extensive efforts to identify all abortion providers and follow up with as many telephone calls as necessary when providers do not respond to the survey. In AGI's 1997 survey, of the 3,032 facilities identified as possible abortion providers, information was obtained directly from 2,161; health department data were used for 365; and 123 were determined to have closed and not to have performed abortions during 1995 or 1996. A remaining 303 facilities did not provide information; of those, estimates of the number of abortions performed were obtained from knowledgeable sources in their communities for 109, and AGI made estimates that were based on information from prior years for 48. No estimates were made for 146 facilities, none of which were known to be large providers of abortions (Henshaw 1998).

AGI has periodically surveyed random samples of physicians and hospitals to assess the number of abortions and providers missed in its provider survey. In 1997 only 9 of 286 hospitals surveyed responded that they performed abortions in 1996; AGI projected that nationally, approximately 124 hospitals, which together performed 4,200 abortions, had been missed. Those abortions equal only 0.3 percent of the 1,365,730 abortions that were reported, however (Henshaw 1998). No random sample of physicians was surveyed in 1997, but a 1993 survey found that about half of the physicians who performed small numbers of abortions in their private offices were missed. Collectively, those doctors may have provided about 3 percent of all abortions. On rare occasions, the AGI survey has missed larger providers, either doctors' offices or clinics. Thus, AGI estimates that its surveys miss from 3 to 6 percent of all abortions; because the percentage probably does not vary greatly, the year-to-year change is probably accurate to within about 1 or 2 percentage points.

The AGI surveys are subject to other sources of error, however. Many respondents estimate their number of abortions rather than report actual statistics and, rarely, a provider is counted twice under two different names. Therefore, although these errors are insignificant at the national level, the possible percentage error for individual states is larger than that for the national total, and the totals can be too high as well as too low.

State health departments vary much more in the completeness of their abortion data. An indication of the completeness of reporting to states may be seen by comparing state health department reports with the totals reported by AGI (see appendix table A). When the figures are within a few percent of each other or the state's figures are higher than AGI's, the state's figures can be considered reasonably accurate, and it is easily possible that they are more accurate than AGI's. In 1996, 18 states reported totals either within 5 percent of AGI's or higher than AGI's. Health department figures, however, were more than 5 percent lower than AGI's in the remaining 29 states (including the District of Columbia and excluding states without reporting systems)—including 20 states in which health department figures were more than 10 percent lower and 12 states in which they were more than 20 percent lower. In most of those cases, the health department figures are almost certainly significantly incomplete.

Furthermore, the completeness of state reporting can vary from year to year. A few years ago, newspaper headlines in Long Island reported a skyrocketing number of abortions in that area. The higher numbers, however, simply reflected reporting by the largest abortion provider, whose abortions had not previously been included in the state figures. In reality, the abortion rate had changed little. Year-to-year comparisons are distorted by the creation of new abortion clinics that do not report, the closing of reporting clinics, and increases or decreases in efforts to induce clinics to report. Thus, for states with incomplete reporting, year-to-year comparisons may be inaccurate indicators of trends in the number of abortions. Appendix table A also shows that AGI provider surveys revealed an increase between 1992 and 1996 in the number of abortions in six states in which health department data showed a decrease; seven states showed an increase according to health department data but had no increase according to AGI data.

Even federal subsidization of abortion data collection does not in itself guarantee accurate statistics, as indicated by the experience of NCHS's Vital Statistics Cooperative System. In 1988, of the 14 states that received federal payments under this program for the collection of abortion data, two failed to obtain reports for more than 30 percent of the abortions counted by AGI and four missed between 10 and 30 percent. NCHS monitored the consistency but, evidently, not the completeness of the data.

For several reasons, some abortions may not be reported to health departments. First, understandably, some slip through the cracks because of imperfect administrative oversight on the part of abortion providers, who occasionally may not complete the reporting form. In addition, temporary staff may be unfamiliar with the forms, batches of forms can be misplaced, and so forth. Second, some clinics experience periods of weeks or months when abortion reporting lapses altogether as a result of staff turnover or other reasons. However, those abortions would be counted in the facility's service statistics and reported to AGI.

Third and most important, some facilities do not report at all, either because they are not aware of the reporting requirement, they want to avoid the administrative burden and have not been subject to sanctions, or for some other reason. Another important factor, however, is providers' fear that the information they provide may fall into the hands of antiabortion protestors or competitors. Most physicians and clinic staff have a high level of concern, even

anxiety, about their safety and about the privacy of their patients. Some clinic directors take extraordinary measures to protect personal information about their physicians and staff, including their home addresses and even their names. Some do not want competitors to know how many patients they serve. Under those circumstances, clinics may be reluctant to submit reports to the state despite assurances of confidentiality. Concern about possible breaches of confidentiality are common in some states, even though known confidentiality lapses are rare.

Some observers believe that abortion reporting may suffer if increasing numbers of physicians provide early medical abortions in their offices using mifepristone, methotrexate, or another agent with a prostaglandin. Such providers may not be known to state statistics agencies and may be unaware of reporting requirements. As of 1996, however, almost all medical abortions were provided in facilities in which surgical abortions were also performed, and there is no reason to believe this situation has changed (Henshaw 1998). Early medical abortion requires physicians to make most of the investment they would need to make for surgical abortion, including ultrasound equipment, procedures for counseling and obtaining informed consent, malpractice insurance, on-call arrangements, and surgical backup for cases in which the medical method fails. They therefore have little incentive to provide abortions medically if they are unwilling to perform them surgically. At least for the next few years, almost all abortions will continue to take place in known abortion facilities. After mifepristone becomes available, plans are in place for the distributor to inform purchasers of state reporting requirements.

Although the most prevalent problem is underreporting of abortions, it is also possible for abortions to be overreported. For example, overreporting can happen when the medical records department of a hospital bases its abortion reports on computerized ICD codes that are ambiguous or incorrect without manually checking the charts. Staff may assume that events coded “abortion, unspecified” are always legal, induced abortions rather than spontaneous or illegal abortions. A patient recorded as having an induced abortion with complications also may have been recorded by another facility if she was brought to the hospital with complications of an abortion performed elsewhere. In addition, treatments of in utero deaths or spontaneous abortions occasionally have been mistakenly reported as induced abortions (Spitz, Lee, Grimes, Schoenbucher, and Lavoie 1983).

In addition to the completeness of reporting, another important concern is that, even in states with accurate reporting of abortions, the number of state residents who have abortions in other states is uncertain. It was undoubtedly the intent of PRWORA’s authors that state policies not increase the number of abortions obtained by residents regardless of where the abortions occur. Their aim would not be met if a reduction were achieved only because women went to a neighboring state for abortion services.

Consequently, tabulation of abortions according to the woman’s state of residence is more relevant for many policy purposes than is tabulation by the state in which the abortion took place. In comparing states with respect to their abortion rates, the results can differ greatly, depending on whether one compares rates based on occurrence or on the woman’s state of residence (table 2). For example, 41 percent of the abortions in Kansas in 1996 were for women

from other states, whereas only 10 percent of Kansas residents who had abortions did so in other states. In that year, in 12 states, 20 percent or more of the residents who had abortions had them outside their home states. About 84 percent of abortions obtained by Wyoming residents took place in Colorado and other states.

Abortions should therefore be allocated back to the woman's state of residence, but this is not always possible with health department data. In addition to the states without reporting systems, at least five states (Arizona, Florida, Iowa, Louisiana, and Massachusetts) do not ascertain the state of residence of out-of-state women, and several states record the name of the state only if it is a neighboring state. Some states participate in cooperative agreements with other states to exchange information about the abortions obtained by each other's residents, but even a state with good reporting usually cannot get complete information from all neighboring states. For example, Mississippi has fairly complete reporting and obtains information on its residents who have abortions in Alabama, but the state is nevertheless left with incomplete information on its residents because no data are available from Louisiana or Tennessee.

Where possible, the CDC reports the proportion of each state's abortions that were for out-of-state women, but it does not tabulate abortions according to the woman's state of residence. AGI attempts this tabulation using state health department data (as appendix table B also shows). For states with incomplete abortion reporting, AGI assumes that the missed abortions are similar to reported abortions with respect to the women's state of residence. For states that collect no data on state of residence, AGI collects the information directly from abortion providers.

Little research has evaluated the accuracy of the specific information items collected on the abortion-reporting forms. In several instances, errors on particular items occurred because of systematic mistakes in data processing or misunderstanding by abortion clinic staff of the definition of terms on the reporting form. In states that ask only two categories of marital status (married and unmarried), women who are separated may be classified by the women themselves or by clinic staff into either category, and women who are cohabiting may report themselves to be married. Length of the pregnancy at the time of the abortion is subject to physician judgment, errors in the woman's report of the date of her last menstrual period, errors for women with irregular periods, and some physicians' defining gestation as beginning at the estimated date of conception rather than two weeks before the estimated date of conception, as prescribed by the instructions for the model reporting form. Variables that rely on women's reports may be inaccurate for items such as history of prior abortions.

In most states, information for most individual items is missing for less than 4 percent of reported abortions. In 1996, according to the CDC abortion surveillance report, data on age were missing for only 0.7 percent of reported abortions nationwide. Data were missing for less than 3 percent of abortions for each of the other items except race (3.6 percent) and Hispanic ethnicity (5.0 percent). Reporting also tends to be incomplete for educational attainment, which is not compiled by the CDC but is collected by most states. Out of concern for patients' rights, a few abortion providers allow women to decide which items will be reported.

An additional weakness of the current abortion-reporting system is the delay in releasing data on the national level. The CDC's publication of the abortion surveillance report for 1996 took place in July 1999. The typical lag between the end of the data year and publication of national results is 2.5 to 3 years. The CDC is reluctant to release its detailed data before every state has reported, which makes it dependent on the slowest state. Delay of this length reduces the value of the data for evaluating program impact. Natality statistics require only 1.5 years; it should be possible to release abortion statistics in a more timely manner.

Reasons for Poor Enforcement of Reporting Requirements

Reporting tends to be especially incomplete when it is voluntary, as in Maryland, New Jersey, and the District of Columbia, but it is also incomplete in many states in which it is mandatory and sanctions are available for enforcement. Where reporting is mandatory, lax enforcement of the requirements can be attributed to three factors: underfunding of the responsible state agencies, lack of interest on the part of state personnel, and lack of awareness of the problem beyond a few state officials.

Regarding the funding of the abortion-reporting systems, Jack Smith of the CDC stated the following:

Rarely did legislatures appropriate any resources for health departments to implement or maintain abortion reporting systems. With no additional resources to establish data collection, do data editing, entry, and processing, and perform statistical analysis and prepare publications, the implementation and maintenance of abortion reporting systems have been low priority. The responsibility for reporting systems usually falls on already overburdened offices of vital and health statistics and the approach to enforcement of the requirements for providers to report is quite passive, especially with regard to reporting by private physicians (Smith 1998, 1).

Interviews with state statistics officials suggest that the completeness of reporting depends to a great extent on the personal interest of individuals in the state health agencies. Where reporting is complete, it is often because one or two officials have taken it on themselves to maintain the quality of reporting. Among the techniques used are mailings to all the physicians in a state who might be providing abortions to inform them of the requirements, conducting periodic training sessions with clinic and hospital staff, monitoring reports and investigating instances in which the number of procedures reported by a facility drops suddenly, checking telephone directories for facilities that are not reporting, and reminding providers that legal action may be brought against those who do not report.

The larger the population of the state and the number of abortion providers, the more difficult it is to secure complete reporting. In a small state, one or two individuals can maintain the quality of reporting, but additional effort is required in a large state. In addition, compared with other areas, large cities are more likely to have low-quality or marginalized providers who resist reporting or are unaware of the requirements. They are also more likely to have more physicians

who provide abortion services only for patients in their private practice and are therefore difficult for the state agency to identify. One state with a large population and many providers, Pennsylvania, has relatively complete reporting, possibly because all doctors and facilities that perform abortions are required to be registered with the state. This procedure may increase providers' awareness of the importance of reporting, and it facilitates follow-up and enforcement by the state statistics agency.

Options for Improving the Quality of Abortion Data

To improve the quality of abortion data, policy makers have at least two options. One is to create a new federal data collection system. The other is to incorporate the existing state reporting programs into a cooperative federal–state system.

A new federal data collection system. Many developed countries have national reporting systems for tracking abortions. Almost every Western European country has reporting requirements much like those used in a number of states. Abortion providers submit a form to a national government agency for each abortion performed, and the national agency tallies the results and publishes statistics annually.

To establish a similar system in the United States, federal legislation would be needed that requires abortion providers to report their abortions directly to a federal agency, probably NCHS or another unit of CDC. Alternatively, federal incentives could be established to induce states to require abortion providers to report all abortions to the federal agency. In either case, the federal agency would be responsible for locating abortion providers, supplying them with reporting forms and instructions, monitoring the completeness and quality of data, imposing sanctions when necessary to ensure compliance, compiling the data, and publishing results. In the states that did not give up their own reporting systems, abortion providers would be subject to dual reporting requirements.

Such a system would undoubtedly meet considerable resistance because the collection of most other vital and health statistics is a state responsibility. A national system would be likely to be seen as an intrusion on state prerogatives. In addition, it is not clear that a federal agency would be as effective as many states in enforcing the reporting requirements. One precedent for national reporting, the collection of data on reportable communicable diseases by the CDC, is not encouraging: Such reporting is incomplete, and sanctions are rarely applied for failure to report. Also, it would seem inefficient not to take advantage of the existing state systems that are effective.

An advantage of a federally controlled system, however, would be increased equity in treatment of the states. Although reporting might still be better in some states than in others because of differences in the number of abortion providers and provider cooperation, the states themselves could not influence the results through neglect, lack of resources, or policy.

A cooperative federal–state system. A more promising approach would be to improve the state abortion reporting systems. With accurate state systems, it would be relatively inexpensive for a federal agency to compile state data files into a national data set of individual abortions, as is done with birth data and as NCHS used to do with 14 cooperating states, as described earlier. For a state to have accurate abortion reporting, it needs (1) legislation or regulations that require all providers to report abortions and authorize sanctions for those who fail to report, (2) reporting of a range of data items that is more inclusive than those currently collected by many states, (3) reporting for each abortion individually rather than reporting of aggregate data, and (4) conscientious compliance with and enforcement of the reporting requirements. Each requirement is discussed below.

- ***Legislation.*** Although most states already have mandatory reporting, new legislation would be needed in the remaining states. California has a reporting law that is not enforced because of legal challenges, and five other states (Alaska, Maryland, New Hampshire, New Jersey, and West Virginia) and the District of Columbia would need to change their reporting from voluntary to mandatory (Saul 1998). Other states might find that they need to strengthen the sanctions available for use against noncompliant providers.
- ***More inclusive data items.*** For the impact of welfare reform and other public policies to be assessed, the minimum required data set should include the following items: month of the procedure; weeks of gestation; abortion procedure used; and the woman’s age, marital status, state and county of residence, education, race, and ethnicity. These items are all included on the NCHS’ model reporting form, the U.S. Standard Report of Induced Termination of Pregnancy. Other items on the model form (the number of births and number of prior abortions) are also useful for evaluation purposes.

Evaluation of welfare reform would be facilitated by revising one item and adding at least one new item. The question on marital status needs revision: At present, it has only two answer categories (married and unmarried), but it should be expanded to five categories (married, separated, divorced, widowed, and never married), as is already done in many states.¹

The new item needed—whether the woman is currently a recipient of public assistance and, if so, which programs she receives—is more problematic, however. Many abortion providers will consider questions about the patient’s program participation to be an unnecessary intrusion on the woman’s privacy and will be reluctant to ask them. Similarly, women may refuse to answer. Information about public assistance is not generally seen as needed for public health purposes and is therefore not currently collected. An exception is Medicaid eligibility, because Medicaid pays for abortion services in some states, and in others, many providers offer a reduced fee to Medicaid recipients.

¹ The “married/not married” classification is ambiguous with respect to separated women, who may be coded into either marital status.

- ***Individual-level, not aggregate data.*** Most states collect information for individual abortions, but Florida, Massachusetts, and the District of Columbia ask abortion providers to report aggregate data. The District of Columbia, for example, requests monthly reporting of the number of abortions performed for women in each age group, the number for women of each race, and so forth. Such aggregate information, however, does not permit analysis of the number of women by age and race jointly. As a result, one cannot determine, for example, the number of white teenagers who obtained abortions. Individual-level data make possible the cross-tabulations that are needed for almost any evaluation of program effects and would be needed to monitor trends of concern to those interested in the effects of welfare reform, such as the abortion rate of unmarried teenagers.
- ***Compliance and enforcement.*** To achieve individual-level reporting of an expanded set of items, new legislation or regulations would be needed in many states. Unfortunately, it is unlikely that many states will enact new requirements on their own initiative within the foreseeable future, although several states (Alaska, Iowa, New Hampshire, and Oklahoma) have recently established abortion-reporting systems, and Delaware has made reporting mandatory. Therefore, the federal government would need to create incentives strong enough to induce states to take action. One approach is for federal payments under PRWORA to be made contingent on states' making mandatory the reporting of the needed data items. To answer objections that such a requirement constitutes an unfunded federal mandate, the data collection could be subsidized, as it was for 14 states until 1992 and as it is currently for natality and mortality statistics. In 1996, states received federal support of about \$12.5 million per year for the collection of data on roughly 6.2 million births, deaths, and spontaneous fetal deaths, which covered a little less than half of state costs. At the same amount per record, the federal subsidy for abortion data would be about \$2.7 million.

Perhaps the most challenging compliance task is to improve the completeness of reporting in the many states in which significant numbers of abortions go unreported in spite of mandatory reporting requirements. As documented above, reporting can be incomplete even when mandatory because of underfunding of the responsible state agencies, lack of interest on the part of state personnel, and lack of awareness of the problem beyond a few state officials. Federal subsidy of abortion reporting would presumably increase the resources devoted to the abortion-reporting systems and encourage states to assign higher priority to this activity. In addition, the subsidy could be contingent on a state's meeting minimum standards of reporting completeness, quality, and scope.

The degree of interest of the responsible state officials is as important as federal incentives in achieving accurate abortion reporting. As described earlier, the states with complete abortion statistics usually have state statistics officers who take a special interest in abortion data collection. One approach to focusing the state officials' attention on abortion statistics would be for the responsible federal agency to hold an annual or periodic conference of state vital and health statistics officers specifically on the topic of abortion data. Such a conference would give states with successful systems an opportunity to describe the approaches and strategies they have found to be helpful, and states with less successful systems could share their problems. Peer

pressure would result in increased attention to abortion reporting. To encourage attendance, the conference should be held at an attractive location at federal expense.

Another problem is that the public, as well as state and federal officials, may not be aware that reporting is incomplete. In the absence of well-publicized evidence to the contrary, it is easy for collectors and users of the data to assume that the statistics are accurate, even when they are not. At present, only the publication of AGI data every four years or so provides a comparison against which officials and others may detect possible shortfalls in their own abortion reporting.

The responsible federal agency could take a number of steps to increase states' awareness of the shortcomings of their abortion statistics. One approach would be to periodically audit state reports, a process that would involve verifying that all facilities advertising abortion services either have filed abortion reports or are not performing abortions. A sample of hospitals could also be checked. The audit would seek to ensure that the reporting of each provider was complete (e.g., by querying any large month-to-month variations in the number of abortions reported).

Another approach would be for the federal agency to assess and publish a report on each state's reporting each year. The state reports could be compared with AGI data and other sources of information, including the previous year's report. A third method would be to require states to routinely report to the federal agency a code number for each abortion provider and the number of abortions reported. The federal agency could use those reports to monitor year-to-year changes in data from the providers and to check to ensure that facilities that advertise abortion services are reporting data.

At present, the CDC is reluctant to openly criticize state data for fear of antagonizing state officials and jeopardizing their cooperation, which is entirely voluntary. The federal agency responsible for ensuring complete reporting would need to be willing to criticize states if reporting was deficient and to impose sanctions if necessary.

Source of Birth Data

Basic information on all births in the United States is available from birth certificates, which record the characteristics of the parents, characteristics of the newborn, and aspects of the mother's prenatal care and health behaviors that might affect the baby. The information is collected electronically or is coded and converted to electronic form by the states. The states then share it with NCHS, which combines data from all states and publishes extensive tabulations. NCHS usually reports the data according to the woman's place of residence rather than where the birth took place. Tabulations are possible by small geographic areas; the only limitation is a policy not to disaggregate to the point at which individuals could be identified. NCHS also makes available to researchers a data file with information about individual births.

Information about women having births is also available from various national sample surveys. The largest of these, the Current Population Survey (CPS), interviews a representative sample of approximately 50,000 households each month and collects information on income,

program participation, and family structure that is not available from birth certificates. The June version of the survey records whether each woman in the household has given birth within the last year. This survey can be used to track national trends in the birth rates of subgroups defined by income and other characteristics relevant to program evaluation that are not available from birth certificates. Even such a large sample, however, does not include enough births to analyze trends in individual states.

Other surveys conducted every few years, such as the National Survey of Family Growth, collect a much broader range of information about women, including those who recently gave birth. As with the CPS, the samples are not large enough to characterize individual states or to assess the impact of individual state policies and programs. Because the surveys are conducted only every few years, short-term trends are difficult to measure, even on a national level.

Quality of Birth Data

The recording of births is relatively complete because parents have a strong incentive to obtain birth certificates for their children. Even illegal aliens want birth certificates to ensure citizenship for their children. NCHS estimates that 99.3 percent of all births are recorded, which makes the data as complete as one could hope for in any statistic and certainly accurate enough for program evaluation.

Most states record the marital status of the mother in two categories (married or not married), with separated women counted as married. The model birth certificate recommended to the states by NCHS defines the mother as married if she was married “at birth, conception or any time between.” Thus, the woman could be counted as married even if the father was never the woman’s husband.² Although some policy makers might consider the child illegitimate in such cases, this small deviation from the ideal measure would have little effect on the measurement of trends.

A more important problem is that two states (Michigan and New York) do not ask the marital status of the mother. In those states, marital status is inferred from other information on the birth certificate, including whether a paternity acknowledgment was received and whether the father’s name is missing. The inferential methods affect comparisons with other states, and they distort trends if the accuracy of the inferences changes over time (e.g., because of increased efforts to have paternity acknowledged). Trends also may be distorted in states that have changed their way of measuring marital status. California and Nevada changed from inferential systems to a direct question in 1997, and Connecticut did so in 1998. New York City changed its method of inferring marital status to conform to the method used by the rest of the state in 1997.

Reporting approaches 100 percent for many of the items on the birth certificate. For example, the mother’s age was recorded for 99.97 percent of all births in 1996. Information for items

² A few states do ask whether the mother is married to the father.

pertaining to the father, however, especially for unmarried women, is much less complete. In 1998, for example, the age of the father was missing for 14 percent of births and for 42 percent of births when the mother was unmarried (see the chapter by Ventura in this volume). Such high rates of missing information severely limit the usefulness of the data pertaining to unmarried fathers.

The major limitation of birth certificate data is the absence of many of the variables of interest to program evaluators: measures of income, program participation, employment status, and the like. The data could be improved marginally by adding a direct question on marital status in states that currently do not ask for that information, but questions covering other aspects of socioeconomic status would be seen as intrusive and inappropriate for a birth certificate.

Birth certificate data permit the level of nonmarital childbearing to be measured as the percentage of births to unmarried women. An alternative measure, which may be more meaningful for some purposes, is the number of nonmarital births per 1,000 unmarried women of childbearing age. An advantage of this measure is that it is not influenced by the number of births to married women. However, it cannot be calculated without estimating the number of unmarried women in a state, and such estimates are generally unavailable except in census years.

Summary and Discussion

PRWORA envisioned changes in state policies that would reduce the rate of nonmarital childbearing without increasing the abortion rate. The success of new policies and programs on those dimensions can only be assessed with accurate time-trend data on both nonmarital childbearing and abortion incidence before and after PRWORA and the other policy changes.

The rate of nonmarital childbearing, defined as the proportion of all births that occurred to unmarried women, is measured adequately and comparably by NCHS for all states except Michigan and New York, which infer marital status from other information, as described earlier. For Michigan, time trends are probably indicative, although with a higher degree of uncertainty than in states with direct measures. Time trends since 1994, however, are problematic for California, Connecticut, Nevada, and New York, which have changed their method of measuring the marital status of parents.

For detailed evaluation of the impact of state welfare policies, information about women giving birth beyond that available from birth certificates is needed. The most important additional information needed includes the mother's income, program participation, employment status, and family structure. Unfortunately, no such data sources are available for most states. One possibility would be to use data from the Pregnancy Risk Assessment Monitoring System (PRAMS), a survey of new mothers that several states conduct annually. Although nonresponse introduces some uncertainty into the results, especially for low-income mothers, if the relevant questions were included on PRAMS or similar surveys, the information could be useful for assessing program impact.

Although the data on the marital status of women giving birth is generally satisfactory for measuring trends, much could be done to improve the completeness of abortion data. Most states have incomplete reporting of abortions despite reporting requirements, some have voluntary reporting, and one has no reporting system. Trends in the numbers of reported abortions are unreliable because of changes in the facilities that agree to report. Even states with complete reporting are unable to accurately measure the number of their residents who have abortions, because some neighboring states have incomplete data or do not share data. Many states do not collect all the data items recommended by the CDC, and none collect the information on program participation, income, and socioeconomic status needed for detailed analysis of program effects.

The most feasible way to obtain accurate abortion data would be to establish a cooperative federal–state system modeled on the NCHS program for recording natality and mortality statistics. To create such a system, federal legislation is needed that would provide strong incentives for states to require the reporting of a minimum set of information for each abortion. Federal financial support for state data collection would be an important part of the incentive package, but other incentives would also be needed.

The states would collect abortion data and share the information with the implementing federal agency, as is done with birth certificate data. The federal agency would monitor the quality and completeness of the data and publish tabulations with abortions allocated to the woman’s state of residence rather than the state in which the abortion took place. As with births, it would make individual-level data (with identifying information removed) available to researchers.

A fundamental difference from the cooperative arrangement for collecting birth statistics is that complete abortion reporting cannot be assumed, whereas little special effort is needed to ensure complete reporting of births. The federal agency would need to have resources to monitor the completeness of each state’s reporting and the authority to apply sanctions if necessary. It would also need to provide technical assistance to the states, hold conferences, and draw attention to states whose data fall below acceptable standards of quality and completeness. Although the federal enforcement aspect of the proposed system is outside the tradition of federal and state vital and health statistics collection, experience has shown that without outside monitoring and the availability of sanctions, some states will be lax in enforcing their abortion-reporting requirements.

A high-quality national abortion-reporting system is essential for awarding the federal bonus to the states with the greatest reduction in nonmarital childbearing and no increase in the rate of abortions. With the currently available data, a state could be incorrectly awarded the bonus because an increase in abortions was obscured by deterioration in abortion reporting; similarly, an otherwise eligible state could be disqualified because its abortion reports incorrectly indicate an increase in the abortion rate.

Perhaps more important, complete and accurate abortion data are needed to evaluate specific welfare reform policies. The family cap, for example, was found to have increased the abortion

rate among Medicaid recipients in New Jersey, but limitations in New Jersey's abortion reporting, which captured only about 54 percent of the state's abortions in 1996, make the finding questionable. With the data currently available, it is difficult to know whether the abortion rate of low-income women increased in relation to that of higher income women after the new welfare policies were adopted.

Even aside from welfare reform, an accurate national abortion data system would have other important uses. Without complete and accurate abortion data, it is difficult to measure the effects of state and local programs to reduce teenage pregnancy. Abortion data are needed to assess the effects of sex education policies and programs, promotion of abstinence, improvements or restrictions in family-planning services, and requirements that minors seeking abortions notify their parents or obtain parental consent.

Many states have implemented restrictions on abortion that raise important questions that can be answered only with accurate abortion data. If the restrictions prevent women from obtaining abortions, they may constitute an undue burden and therefore be unconstitutional. Conversely, if data show that access to services remains unchanged, a basis for opposition to the restrictions disappears. Among the policies that merit evaluation are waiting periods, clinic regulations, Medicaid funding restrictions, and policies that affect the availability of abortion service providers.

Finally, abortion data are needed to evaluate the effects of new developments and emerging social trends. Some opponents of abortion predict that the availability of medical methods of early abortion will increase the abortion rate because abortion will seem easier. Similarly, family-planning advocates hope that emergency contraception will reduce the number of abortions. Only accurate data will enable those predictions to be tested. More generally, abortion data are needed for an understanding of trends in the rates of birth and unintended pregnancy. Data now available are reasonably adequate at the national level, but much better understanding could be gained from data on smaller geographic areas and population subgroups.

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Appendix Table A. Number of abortions as reported by state health departments/CDC and AGI, 1992 and 1996, percent difference between data sources, and change 1992-1996, by state								
State	Reported abortions, 1992			Reported abortions, 1996			Change 1992-1996	
	State health department*	AGI	Percent difference**	State health department*	AGI	Percent difference**	State health department*	AGI
U.S. Total	1,359,145	1,528,930	-11.1	1,221,585	1,365,730	-10.6	-137,560	-163,200
Alabama	13,358	17,450	-23.4	13,826	15,150	-8.7	468	-2,300
Alaska	1,783	2,370	-24.8	2,139	2,040	4.9	356	-330
Arizona	14,353	20,600	-30.3	11,016	19,310	-43.0	-3,337	-1,290
Arkansas	5,675	7,130	-20.4	5,882	6,200	-5.1	207	-930
California	338,700	304,230	11.3	280,180	237,830	17.8	-58,520	-66,400
Colorado	10,607	19,880	-46.6	9,710	18,310	-47.0	-897	-1,570
Connecticut	17,762	19,720	-9.9	14,094	16,230	-13.2	-3,668	-3,490
Delaware	5,601	5,730	-2.3	4,482	4,090	9.6	-1,119	-1,640
District of Columbia	17,698	21,320	-17.0	13,674	20,790	-34.2	-4,024	-530
Florida	69,285	84,680	-18.2	80,040	94,050	-14.9	10,755	9,370
Georgia	38,052	39,680	-4.1	35,790	37,320	-4.1	-2,262	-2,360
Hawaii	5,954	12,190	-51.2	4,916	6,930	-29.1	-1,038	-5,260
Idaho	1,378	1,710	-19.4	1,022	1,600	-36.1	-356	-110
Illinois	56,552	68,420	-17.3	53,613	69,390	-22.7	-2,939	970
Indiana	12,983	15,840	-18.0	13,341	14,850	-10.2	358	-990
Iowa	6,759	6,970	-3.0	7,602	5,780	31.5	843	-1,190
Kansas	10,385	12,570	-17.4	10,685	10,630	0.5	300	-1,940
Kentucky	8,696	10,000	-13.0	7,000	8,470	-17.4	-1,696	-1,530
Louisiana	12,423	13,600	-8.7	11,865	14,740	-19.5	-558	1,140
Maine	3,226	4,200	-23.2	2,615	2,700	-3.1	-611	-1,500
Maryland	19,860	31,260	-36.5	12,363	31,310	-60.5	-7,497	50
Massachusetts	34,527	40,660	-15.1	29,293	41,160	-28.8	-5,234	500
Michigan	34,496	55,580	-37.9	30,208	48,780	-38.1	-4,288	-6,800
Minnesota	15,546	16,180	-3.9	14,193	14,660	-3.2	-1,353	-1,520
Mississippi	7,555	7,550	0.1	4,206	4,490	-6.3	-3,349	-3,060
Missouri	13,390	13,510	-0.9	11,629	10,810	7.6	-1,761	-2,700
Montana	2,869	3,300	-13.1	2,763	2,900	-4.7	-106	-400
Nebraska	5,637	5,580	1.0	5,214	4,460	16.9	-423	-1,120
Nevada	8,022	13,300	-39.7	6,965	15,450	-54.9	-1,057	2,150
New Hampshire	3,129	3,890	-19.6	2,300	3,470	-33.7	-829	-420
New Jersey	38,168	55,320	-31.0	31,860	63,100	-49.5	-6,308	7,780
New Mexico	5,624	6,410	-12.3	5,033	5,470	-8.0	-591	-940

State	Reported abortions, 1992			Reported abortions, 1996			Change 1992-1996	
	State health department*	AGI	Percent difference**	State health department*	AGI	Percent difference**	State health department*	AGI
New York	164,274	195,390	-15.9	152,991	167,600	-8.7	-11,283	-27,790
North Carolina	35,253	36,180	-2.6	33,554	33,550	0.0	-1,699	-2,630
North Dakota	1,493	1,490	0.2	1,291	1,290	0.1	-202	-200
Ohio	36,019	49,520	-27.3	36,530	42,870	-14.8	511	-6,650
Oklahoma	9,881	8,940	10.5	6,769	8,400	-19.4	-3,112	-540
Oregon	12,685	16,060	-21.0	13,767	15,050	-8.5	1,082	-1,010
Pennsylvania	49,042	49,740	-1.4	38,004	39,520	-3.8	-11,038	-10,220
Rhode Island	6,667	6,990	-4.6	5,437	5,420	0.3	-1,230	-1,570
South Carolina	11,008	12,190	-9.7	9,326	9,940	-6.2	-1,682	-2,250
South Dakota	1,038	1,040	-0.2	901	1,030	-12.5	-137	-10
Tennessee	18,029	19,060	-5.4	17,989	17,990	0.0	-40	-1,070
Texas	91,113	97,400	-6.5	91,470	91,270	0.2	357	-6,130
Utah	3,941	3,940	0.0	3,639	3,700	-1.6	-302	-240
Vermont	2,778	2,900	-4.2	2,139	2,300	-7.0	-639	-600
Virginia	29,641	35,020	-15.4	25,770	29,940	-13.9	-3,871	-5,080
Washington	27,573	33,190	-16.9	26,138	26,340	-0.8	-1,435	-6,850
West Virginia	2,812	3,140	-10.4	2,470	2,610	-5.4	-342	-530
Wisconsin	15,549	15,450	0.6	13,673	14,160	-3.4	-1,876	-1,290
Wyoming	296	460	-35.7	208	280	-25.7	-88	-180

*As reported to the CDC. Numbers in italics were derived by the CDC by surveying large providers or were estimated by the CDC.
**Percent by which health department totals are lower or higher than AGI's.
Sources: References 1 and 3.

Appendix Table B. Number of abortions* and abortion rates by state of occurrence and residence, 1996								
State	Provided in the state			Obtained by residents**			Abortion rate***	
	Total	To non-residents		Total	Obtained out of state		By state of:	
		Number	Percent		Number	Percent	Residence**	Occurrence
U.S. Total	1,365,730	87,210	6	1,359,840	81,320	6	22.8	22.9
Alabama	15,150	2,210	15	14,940	2,000	13	15.3	15.6
Alaska	2,040	0	0	2,310	270	12	16.5	14.6
Arizona	19,310	260	1	20,120	1,070	5	20.6	19.8
Arkansas	6,200	570	9	6,670	1,040	16	12.3	11.4
California	237,830	1,130	0	237,870	1,170	0	33.0	33.0
Colorado	18,310	1,880	10	16,670	240	1	19.0	20.9
Connecticut	16,230	600	4	16,510	880	5	22.9	22.5
Delaware	4,090	1,410	34	2,970	290	10	17.5	24.1
District of Columbia	20,790	10,370	50	11,190	770	7	83.2	154.5
Florida	94,050	5,270	6	90,160	1,380	2	30.7	32.0
Georgia	37,320	3,510	9	35,230	1,420	4	19.9	21.1
Hawaii	6,930	20	0	6,930	20	0	27.3	27.3
Idaho	1,600	100	6	2,450	950	39	9.4	6.1
Illinois	69,390	4,350	6	66,920	1,880	3	25.2	26.1
Indiana	14,850	520	4	18,330	4,000	22	13.8	11.2
Iowa	5,780	610	11	6,150	980	16	10.0	9.4
Kansas	10,630	4,350	41	6,940	660	10	12.3	18.9
Kentucky	8,470	1,740	21	7,890	1,160	15	8.9	9.6
Louisiana	14,740	2,770	19	13,110	1,140	9	13.1	14.7
Maine	2,700	80	3	3,390	770	23	12.2	9.7
Maryland	31,310	1,760	6	39,080	9,530	24	32.9	26.3
Massachusetts	41,160	3,070	7	40,150	2,060	5	28.6	29.3
Michigan	48,780	2,090	4	47,430	740	2	21.7	22.3
Minnesota	14,660	1,340	9	13,950	630	5	13.3	13.9
Mississippi	4,490	240	5	9,010	4,760	53	14.4	7.2
Missouri	10,810	1,180	11	16,040	6,410	40	13.5	9.1
Montana	2,900	500	17	2,430	30	1	13.1	15.6
Nebraska	4,460	890	20	3,930	360	9	10.8	12.3
Nevada	15,450	1,750	11	14,080	380	3	40.7	44.6
New Hampshire	3,470	740	21	4,670	1,940	42	17.1	12.7
New Jersey	63,100	1,400	2	64,230	2,530	4	36.4	35.8
New Mexico	5,470	240	4	6,560	1,330	20	17.3	14.4
New York	167,600	4,860	3	164,080	1,340	1	40.2	41.1
North Carolina	33,550	3,620	11	31,070	1,140	4	18.7	20.2

3: Birth and Abortion Data

State	Provided in the state			Obtained by residents**			Abortion rate***	
	Total	To non-residents		Total	Obtained out of state		By state of:	
		Number	Percent		Number	Percent	Residence**	Occurrence
North Dakota	1,290	430	33	1,050	190	18	7.6	9.4
Ohio	42,870	3,160	7	41,320	1,610	4	16.4	17.0
Oklahoma	8,400	520	6	8,490	610	7	11.9	11.8
Oregon	15,050	1,830	12	13,540	320	2	19.5	21.6
Pennsylvania	39,520	1,920	5	42,080	4,480	11	16.2	15.2
Rhode Island	5,420	1,010	19	5,290	880	17	23.8	24.4
South Carolina	9,940	620	6	12,440	3,120	25	14.5	11.6
South Dakota	1,030	230	22	1,200	400	33	7.6	6.5
Tennessee	17,990	3,410	19	16,690	2,110	13	13.8	14.8
Texas	91,270	3,900	4	88,250	880	1	20.0	20.7
Utah	3,700	360	10	3,850	510	13	8.1	7.8
Vermont	2,300	480	21	2,050	230	11	15.2	17.1
Virginia	29,940	1,730	6	33,170	4,960	15	21.0	18.9
Washington	26,340	1,240	5	26,950	1,850	7	21.4	20.9
West Virginia	2,610	330	13	3,400	1,120	33	8.6	6.6
Wisconsin	14,160	590	4	14,980	1,410	9	13.0	12.3
Wyoming	280	20	7	1,630	1,370	84	15.5	2.7

*Numbers of abortions are rounded to the nearest 10.
 **Excludes 5,860 abortions provided to non-U.S. residents.
 ***Per 1,000 women aged 15-44.
 Source: The Alan Guttmacher Institute.