Teenage Childbearing in the United States, 1960–1997

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Abstract: Teenage childbearing in the United States has declined significantly in the 1990s. Still the U.S. teen birth rate is higher than in other developed countries; in 1997 it was 52.3 births per 1000 women aged 15 to 19. A steep rise in teen birth rates in the late 1980s generated a great deal of public concern and a variety of initiatives targeted to reducing teen births. Data from the National Center for Health Statistics' National Vital Statistics System are used to review and describe trends and variations in births and birth rates for teenagers for the period 1960–1997. Teen birth rates were much higher in the early 1960s than at present; in fact, rates for 18- to 19-year-olds were double what they are currently. In the 1990s, birth rates for teenagers dropped for younger and older teenagers, with greater declines recorded for younger teens. While rates have fallen in all population groups, the greatest declines have been experienced by black teenagers, whose rates have dropped 24% on average.

Trends in teen births and birth rates since 1960 have been affected by a variety of factors. These include wide swings in the number of female teenagers, substantial declines in marriage among older teens, falling birth rates for married teens concurrent with rapidly rising birth rates for unmarried teens, and sharp increases in sexual activity among teens that have abated only recently, according to the National Center for Health Statistics' National Survey of Family Growth. This review article also tracks changes in contraceptive practice and abortion rates.

Medical Subject Headings (MeSH): adolescence, birth rate, fertility, marital status (Am J Prev Med 2000;19(1S):18–25)

Introduction

Numbers of births and birth rates for U.S. teenagers have declined steadily in the 1990s, following steep increases from 1986 to 1991. The rate for 1997 is just slightly higher than the record low rate recorded in 1986. Despite the recent reductions, birth (and pregnancy) rates for U.S. teenagers continue to be higher than rates for teenagers in most other developed countries.¹

Teenage childbearing continues to be an important social issue; studies have shown that teenage mothers are more likely to be poorly educated and more likely to face lifetime poverty.² Although birth rates for U.S. teenagers were substantially higher in the 1960s and early 1970s than in the mid-1990s, most teenagers giving birth in the earlier period were married, whereas most teenagers giving birth recently are unmarried. The proportion of all teen births to unmarried teens rose from 15% in 1960 to 78% in 1997. Moreover,

infants born to teen mothers are more likely to be of low birth weight, weighing <2500 g, and more likely to be born preterm, that is, before 37 completed weeks of gestation. These factors place these infants at greater risk of morbidity, developmental delays, and death.^{3,4}

This article reviews and describes trends and variations in numbers of births and birth rates for teenagers since 1960, and places the trends in perspective, considering the changes in demographic factors such as marriage patterns and birth rates for married and unmarried teenagers, and in behavioral factors such as sexual activity, contraceptive use, and abortion.

Methods

Birth data for the 1985–1997 period presented in this article are based on 100% of the birth certificates registered in all 50 states and the District of Columbia. The data are provided by the states to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program (VSCP). In 1984 and earlier years, the VSCP included varying numbers of states that provided data based on 100% of their birth certificates. Data for states not in the VSCP were based on a 50% sample of birth certificates filed in those states. More than 99% of births occurring in the United States are

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Figure 1. Teen birth rate, number of births to teens, and number of teens aged 15 to 19, United States, 1960–1997. <u>Note:</u> Rates are plotted on a log scale.

registered.⁵ Information on sampling procedures and sampling errors for 1984 and earlier years is provided in the annual report, *Vital Statistics of the United States*, Volume I, Natality.⁵ Population data for computing birth rates were provided by the U.S. Bureau of the Census.^{6,7} Tabulations of births beginning in 1980 are by race and Hispanic origin of the mother as reported on the birth certificate. Rates by race for 1960–1979 are by race of child, which was determined by an algorithm that took into account the race(s) of the mother and the father.⁵ Rates for Native American and Asian or Pacific Islander teenagers are available since 1980, while rates for Hispanic teenagers are available for 1980 and annually since 1989. Detailed information on the computation of birth rates, population denominators, and statistical significance is published elsewhere.^{3,5}

This report focuses on patterns of teenage births, not pregnancies. Pregnancies include live births, induced abortions, and fetal losses. In 1996, 55% of teenage pregnancies ended in live birth, 30% in induced abortion, and 15% in fetal loss.⁸ This article focuses primarily on childbearing by teenagers aged 15 to 19. Some summary data are included for births to teens under age 15. In 1997, about 10,000 babies were born to girls aged 10 to 14. Birth rates for this age group, however, are very small, about one birth per 1000.

Birth data by marital status in 1997 are based on an item on the birth certificates of all but three states, asking if the mother is married (at birth, conception, or at any time in between). The remaining three states (Connecticut, Michigan, and New York) determine the mother's marital status by inferential procedures. A birth is inferred as nonmarital if any of these factors is present: a paternity acknowledgment was received, the father's name is missing, or the father's and mother's current surnames are different. In 1997, the first two factors were primarily used to infer marital status. The number of states providing data based on inferred marital status has declined since 1980 (nine states) when inferential data were first used by NCHS. Detailed information on these procedures is presented elsewhere.^{3,5,9}

Results

Trends by Age

Teenage childbearing has fluctuated greatly since 1960. The long-term trend is clearly downward, although there was a sharp upturn in the late 1980s, which generated considerable public concern (Figure 1). The live birth rate in 1997 was 52.3 births per 1000 women aged 15 to 19, reduced 16% from its recent high in 1991 of 62.1, and 41% lower than in 1960 (89.1). The U.S. teen birth rate peaked in 1957, at 96.3. Birth rates for women in all age groups also peaked in 1957. Despite the vast difference in the 1957 and 1997 birth rates for teenagers, the *proportion* of all births that were to teenagers was the same in both years, 13%. This reflects the impact of much higher birth rates for women in all age groups in 1957 than in 1997.

Birth rates for teenage subgroups have dropped since 1960, but the long-term decline is much steeper and more consistent for teens aged 18 to 19. The rate for older teens in 1997 (83.6 per 1000) was half the 1960 rate, 166.7 (Table 1 and Figure 2). Most of the decline for 18- to 19-year-olds occurred from 1960 to 1978 (79.8), when the rate stabilized and changed little until the upswing from 1987 to 1992 when the rate increased 20%. Since 1992, the rate has dropped 12%. In contrast, the long-term decline in the birth rate for teens aged 15 to 17 has been more modest. After its initial 20% decline from 1960 (43.9 per 1000) to 1968 (35.1), the rate fell more slowly in the 1970s and early 1980s. The birth rate then jumped sharply—by 27%from 1986 to 1991, before declining 17% by 1997 (32.1).

The number of births to teenagers has also fallen considerably since 1960. Whereas the teen birth *rate* peaked in 1957, the *number* did not peak until 1970, at

Table 1. Births and birth rates for teenagesrs by age: United States, selected years, 1960–1997										
		Numb	er of births		Birth rate (per 1000 women in specified group)					
			15–19 years	5		15–19 years				
Year	10-14 years	Total	15–17 years	18–19 years	10–14 years	Total	15–17 years	18–19 years		
1960	6,780	586,966	182,408	404,558	0.8	89.1	43.9	166.7		
1965	7,768	590,894	188,604	402,290	0.8	70.5	36.6	124.5		
1970	11,752	644,708	223,590	421,118	1.2	68.3	38.8	114.7		
1975	12,642	582,238	227,270	354,968	1.3	55.6	36.1	85.0		
1980	10,169	552,161	198,222	353,939	1.1	53.0	32.5	82.1		
1985	10,220	467,485	167,789	299,696	1.2	51.0	31.0	79.6		
1990	11,657	521,826	183,327	338,499	1.4	59.9	37.5	88.6		
1995	12,242	499,873	192,508	307,365	1.3	56.8	36.0	89.1		
1996	11,148	491,577	185,721	305,856	1.2	54.4	33.8	86.0		
1997	10,121	483,220	180,154	303,066	1.1	52.3	32.1	83.6		

644,708 births (Figure 1). The 1970 total is 40% higher than the lowest number reported in 1986 at 461,905. The lines in Figure 1 show in fact that the birth rate and the number of births were heading in opposite directions in the 1960s. The birth rate dropped considerably while the number of births continued to increase. This disparity in trends reflects the influence of the babyboom generation. That is, women who were teenagers in the mid to late 1960s were born in the first years of the baby boom, from 1946 to the mid-1950s. So, even though the birth rate declined for teenagers during this period, the number of teenage women grew substantially, thus increasing the number of births in this age group. In fact, between 1960 and 1970, the number of women aged 15 to 19 jumped 43% (Figure 1). During this decade, the birth rate for teenagers declined 23%. The steep increase in the number of women was more than enough to compensate for the sharp decline in the birth rate so that the number of births to teenagers increased 10% (Table 1 and Figure 1). In contrast, in the late 1980s, the increase in the number of births to teenagers was fueled exclusively by the rising birth rate, the number of teen women fell during those years. Most recently, in the 1990s, the decline in the birth rate has been more than enough to offset the increasing

numbers of teen women, so that the *number of teen births* has fallen.

Just as the trends in the birth rates differed by age subgroup, so did the trends in the number of births. Most of the 25% overall decline in the number of births to teens aged 15 to 19 from 1970 to 1997 is due to the 28% drop in births to older teens aged 18 to 19. Births to teens aged 15 to 17 fell 19% overall during the 1970–1997 period. In the 1990s, the number of births to teen women has declined modestly and stabilized at just under 500,000. The numbers by age subgroup also changed relatively little in the 1990s. As of 2000, the number of teen women in the population is increasing by 5%.¹⁰ Therefore, further reductions in the number of births to teens will depend on continued declines in the birth rates of sufficient magnitude to compensate for the population increases.

Repeat Childbearing

Among the factors that exacerbate the consequences of teenage childbearing is a second birth to a teenager. Teenagers with two or more children are at greater risk for a variety of difficulties, including long-term or permanent educational deficits and poverty.² More-



Figure 2. Birth rates for teenagers by age, United States, 1960–1997. Note: Rates are plotted on a log scale.



Figure 3. Rates of first and second births to teenagers, United States, 1960–1997. Note: Rates are first births per 1000 teens who have had no births, and second births per 1,000 teens who have had one child. Rates are plotted on a log scale.

over, their infants are at even greater risk for poor birth outcome, including higher rates of low birth weight and preterm birth. The elevated risks are related in part to the generally short intervals between births for teenagers who have a second or subsequent child.^{5,11}

The birth rate for second births to teenagers who had already had one child fell more than half from 359 per 1000 in 1960 to a low point of 168 per 1000 in 1976 (Figure 3).¹² This rate increased 20% from the mid-1980s until 1991 and has declined to 174, almost matching the all-time low rate of 1976 (168 per 1000).⁵ Put another way, in 1960, 36% of teens who were already mothers gave birth to a second child compared with 17% in 1997. First birth rates for teenagers also fell from 1960 to the mid-1980s, but much more modestly (declined 37%). The first birth rate then rose rapidly through 1994 (by 21%) and has since declined about 11%.

Race and Hispanic Origin

Teen childbearing patterns, like fertility patterns in general, differ substantially by race and Hispanic ethnicity of the mother (Table 2 and Figure 4). The absolute levels of teen childbearing as measured by the birth rates are quite different. Until 1994, the rate for black teenagers was considerably higher than for any other group; the rate for Hispanic teenagers is currently the highest. In 1997, the rate for Hispanic teens was 97.4 per 1000, while the rate for black teenagers was 88.2. This means that almost 10% of Hispanic teens and 8.8% of black teens had a baby in 1997. The birth rate for Native American teenagers is also relatively high, 71.8 per 1000 or 7.2%. Rates are sharply lower for non-Hispanic white and Asian or Pacific Islander teenagers, 36.0 per 1000 (3.6%) and 23.7 per 1000 (2.4%), respectively.

What is striking about the trends by race and Hispanic origin is how similar they are over time (Figure 4). Increases and declines over time have been experi-

enced by all groups almost simultaneously. The current decline began after 1991 for all groups except for Hispanic teens, whose birth rate peaked in 1994.

Marital Status

We have described the trends and variations in teenage childbearing since 1960. We have reviewed the influence of the principal demographic factors on these patterns, that is, the teen birth rate, measuring the "risk" that a teenager will give birth in a given year, and the number of teen women in the population. Now we will look at the trends in other key demographic and behavioral factors that have affected teen childbearing patterns. One of the most important factors is trends in marriage patterns. Marriage among younger female teenagers aged 15 to 17-always very rare-has now virtually disappeared (less than 2% in 1997 were married compared with about 5% in 1960).^{14,15} Older teenagers have never married in large numbers, but the proportion married among female teens aged 18 to 19 has declined considerably since 1960. In that year, 28% of women aged 18 to 19 were married; by 1997, this proportion fell to 7%.^{14,15} This decline in marriage is no doubt a significant factor in the initial decline in the teen birth rate from 1960 through the mid-1970s. In that period, most teenagers who gave birth were married.16,17

The other major trend beginning in the 1960s is the sharp divergence in birth rates for married and unmarried teenagers. From 1966 to the mid-1970s the birth rate for married teens 18 to 19 fell 36% while the rate for unmarried teens increased by 25% (Figure 5 and Table 3). As a consequence of these divergent trends, the proportion of teen births to unmarried women rose dramatically, doubling among teens aged 18 to 19 just in the decade 1965–1975, from 15% to 30%.

From 1975 to 1997, the birth rate for unmarried teens aged 18 to 19 doubled, while the rate for married teens increased modestly. However, the increase in the

Table 2. Birth rates for teenagers 15–19 years, by age, race, and Hispanic origin of mother: United States, selected years, 1960-1997, and percent change, 1991 to 1997. (Rates are per 1000 women in specified group.)

Age	and	race	and	His	panic	origin	of	mother
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Age and race and Hispanic origin of mother								Percent change.
15–19 years	1960	1970	1980	1985	1990	1991	1997	1991–1997
Aged 15–19 years								
Total	89.1	68.3	53.0	51.0	59.9	62.1	52.3	-15.8
White, total	79.4	57.4	45.4	43.3	50.8	52.8	46.3	-12.3
Non-Hispanic White		_	41.2		42.5	43.4	36.0	-17.1
Black	156.1	140.7	97.8	95.4	112.8	115.5	88.2	-23.6
Native American ^a			82.2	79.2	81.1	85.0	71.8	-15.5
Asian or Pacific Islander			26.2	23.8	26.4	27.4	23.7	-13.5
Hispanic ^b			82.2		100.3	106.7	97.4	-8.7
Aged 15–17 years								
Total	43.9	38.8	32.5	31.0	37.5	38.7	32.1	-17.1
White, total	35.5	29.2	25.5	24.4	29.5	30.7	27.1	-11.7
Non-Hispanic White			22.4		23.2	23.6	19.4	-17.8
Black		101.4	72.5	69.3	82.3	84.1	60.8	-27.7
Native American ^a			51.5	47.7	48.5	52.7	45.3	-14.0
Asian or Pacific Islander			12.0	12.5	16.0	16.1	14.3	-11.2
Hispanic ^b			52.1		65.9	70.6	66.3	-6.1
Aged 18–19 years								
Total	166.7	114.7	82.1	79.6	88.6	94.4	83.6	-11.4
White, total	154.6	101.5	73.2	70.4	78.0	83.5	75.9	-9.1
Non-Hispanic White			67.7		66.6	70.5	61.9	-12.2
Black		204.9	135.1	132.4	152.9	158.6	130.1	-18.0
Native American ^a			129.5	124.1	129.3	134.3	117.6	-12.4
Asian or Pacific Islander	_		46.2	40.8	40.2	43.1	39.3	-8.8
Hispanic ^b	—	—	126.9	—	147.7	158.5	144.3	-9.0

Notes: Rates for 1960 and 1970 are tabulated by race of child; see reference 5. Rates by Hispanic origin for 1980 are based on births in 22 states; see reference 13. -, data not available.

^aIncludes births to Aleuts and Eskimos.

^bIncludes all persons of Hispanic origin of any race.

marital rate had relatively little effect since so few teenagers were married. The proportion of births that were out of wedlock more than doubled from 1975 to 1997, reflecting almost entirely the dramatic rise in the birth rate for unmarried teens. Measures of nonmarital childbearing also increased steeply for women aged 20 and older during this period.^{3,9}

Discussion

Trends in Sexual Activity

A key factor in the upward trend in nonmarital births among teenagers for most of the period since 1960 was the dramatic rise in sexual activity among unmarried teens. Data from various cycles of the National Survey



Figure 4. Birth rates for teens aged 15 to 19 by race and Hispanic origin, United States, 1960–1997. Note: Rates are plotted on a log scale.



Figure 5. Birth rates for married and unmarried teenagers aged 18 to 19, United States, 1960–1997. Note: Rates are plotted on a log scale.

of Family Growth (NSFG) conducted by NCHS document large, long-term increases from 1970 to 1988 in the proportion of female teens aged 15 to 19 who have had sexual intercourse.^{18,19} The proportions were relatively stable during the 1960s.²⁰ The increase was most rapid from 1970 to 1975, when the proportion rose from 29% to 36%. The pace of increase gradually slowed over the next decade, with the proportion sexually experienced rising to 42% in 1980 and 44% 1985. The proportion increased considerably to 53% in 1988 and 55% in 1990, and has since stabilized at 50% in 1995.²¹ The rapid increase in the proportion sexually experienced during the 1970s was no doubt an important factor in the steep climb in the birth rate for unmarried teenagers noted earlier. It now appears, based on data from three separate national surveys, that the long-term rise in sexual activity among teens may have stopped, at least temporarily.^{21–24} Nonetheless, about half of female teens and slightly more than half of male teens aged 15 to 19 have had sexual intercourse at least once.21,22

Contraceptive Use

Concurrent with the upward climb in teen sexual activity has been considerable change in rates and patterns of contraceptive use. Contraceptive use among sexually experienced teens increased in the 1970s, both use at first intercourse and at last intercourse, but large proportions of teens were still exposed to the risk of unintended pregnancy.²⁵ During the 1970s there was a shift among contraceptive users toward the pill. In 1982, according to the NSFG, 64% of sexually experienced teens were using the pill, and 21% were using the condom. Pill use declined and condom use increased in 1988 and 1995. By 1995, just 44% of teens were using the pill, and 37% were using condoms.²⁶ The rise in condom use is no doubt linked to widespread education efforts in the face of the AIDS epidemic. Between 1988 and 1995, a growing proportion of teens were using highly reliable implant and injectable contraception, about 13% in 1995.26 The adoption of these effective hormonal methods is probably a key factor in

Table 3. Birth rates for married and unmarried teenagers, and number and percent of teen births to unmarried women, by age: United States, selected years, 1960–1997

	Birth rate for married teens, 15–19 years ^a			Birth rate for unmarried teens 15–19 years ^a			Number of births to unmarried teens, 15–19 years			Percent of teen births to unmarried teens, 15–19 years		
Year	Total	15–17	18–19	Total	15–17	18–19	Total	15–17	18–19	Total	15–17	18–19
1960	530.6	_	_	15.3	_	_	87,100	43,700	43,400	14.8	24.0	10.7
1965	462.7			16.7		_	123,200	61,800	61,400	20.8	32.7	15.3
1970	443.7	720.3	386.3	22.4	17.1	32.9	190,400	96,100	94,300	29.5	43.0	22.4
1975	313.1	482.1	270.6	23.9	19.3	32.5	222,500	116,800	105,800	38.2	51.4	29.8
1980	349.5	486.1	318.0	27.6	20.6	39.0	262,777	121,900	140,877	47.6	61.5	39.8
1985	357.4	483.7	327.5	31.4	22.4	45.9	270,922	118,931	151,991	58.0	70.9	50.7
1990	420.2	610.9	385.1	42.5	29.6	60.7	349,970	142,398	207,572	67.1	77.7	61.3
1995	362.4	445.3	341.0	44.4	30.5	67.6	375,738	161,140	214,598	75.2	83.7	69.8
1996	344.3	404.8	328.4	42.9	29.0	65.9	373,289	156,838	216,451	75.9	84.4	70.8
1997	323.0	296.1	331.7	42.2	28.2	65.2	376,117	156,253	219,864	77.8	86.7	72.5

Notes: For procedures for calculating birth rates by marital status, see Ventura ⁹. —, data not available. ^aRate per 1000 women in specified group.

the recent sizable decline in the rate of second births to teenagers who have had one child. Data from the 1995 NSFG show that more than 25% of teen mothers are using these methods. The availability of publicly funded family planning services has been an important factor in the increased use of contraception among teenagers as well as older women.²⁰ The proportion of sexually active female teenagers reporting not using any contraception declined from 10% in 1982 to 7% in 1995; similar findings have been reported for adolescent males.^{22,26}

Fathers of Babies Born to Teenagers

This article has focused on the demographic aspects of births to teenage women. Data on the fathers of babies born to teenagers are quite limited. The overwhelming majority of births to teenagers are to unmarried teenagers. Most states generally prohibit the reporting of information on the father if the parents are not married or if a paternity acknowledgment has not been signed.

In 1997, information on the age of the father was not available for 37% of births to teenagers. Using data from the 1988 National Maternal and Infant Health Survey, researchers have found among births to teenagers a similar pattern of age distribution for fathers and mothers as found for births to older women. Births to young teenagers (under age 18) and older men (\geq 5 years older) comprised a troubling but very small fraction of all births to teenagers, 8% according to the recent study.²⁷

Abortion

The availability of abortion services throughout the country since 1973 has no doubt had a role in the trends in the live birth rate for teenagers over the past quarter century. During the 1970s the abortion rate for teenagers increased while the live birth rate declined. Birth and abortion rates changed little during the early 1980s. Beginning in the late 1980s the trends began to diverge, with the birth rate rising steeply and the abortion rate falling steadily. Changes in access to abortion services during this period may have affected abortion rates.²⁸ After 1991, the birth rate began to decline as well, while the abortion rate continued to fall. Overall, the abortion rate among teens fell by nearly one third between the late 1980s and 1996.²⁹⁻³¹ The concurrent declines in the 1990s in teen birth and abortion rates reflect declines in the overall teen pregnancy rate.8

International Comparisons

Birth rates for teenagers vary dramatically among countries. In 1997, teenage birth rates in six developed countries ranged from 4 per 1000 aged 15 to 19 in Japan to 29 in Great Britain compared with the U.S. rate of 52.¹ Researchers have attributed the much higher levels of teen pregnancy and birth rates in the United States compared with most other developed countries to differences in attitudes about sex education, contraception, and reproductive health care.²⁰

Factors Accounting for Declines in the 1990s

The recent downturn in U.S. teen birth rates has now extended through most of the 1990s and affected virtually all population subgroups. The downturn followed immediately after a steep and rapid increase in the rates during the late 1980s that raised widespread concern among the public at large as well as among policymakers. The upturn in the late 1980s resulted largely from higher rates of sexual activity rather than declines in contraceptive use. It is probably still too soon to be certain how various factors were responsible for the dramatic shift in the 1990s. Numerous factors could account for these declines, including declines in sexual activity, shifts to more effective means of contraception, and reduced rates of unintended pregnancv.^{21–24,26,28,29,32} One key factor is the apparent stabilization and even decline in rates of sexual activity among both female and male teenagers. Three separate national surveys have reported this finding.²¹⁻²⁴ Higher rates of contraceptive use at first intercourse are also an important factor.²¹ The widespread clamor for action in the late 1980s when teen pregnancy and birth rates were on the rise led to a variety of initiatives at the national, state, and local levels to reduce teen pregnancy.

Unfortunately, very few of the programs that have been evaluated and deemed effective have been widely and carefully replicated. Rigorous evaluation of teen pregnancy prevention programs is essential to assess "what works."33 Researchers conducting the large-scale, federally supported survey Add Health (The National Longitudinal Study of Adolescent Health) have reported that teens with strong connections to their families and home, school, and community are less likely to engage in risky behaviors, including sexual activity.³⁴ Teen pregnancy, sexually transmitted diseases, and AIDS/HIV have stimulated a wide range of public health education and prevention efforts and a national strategy to prevent teen pregnancy.^{35,36} As these efforts continue and intensify, it is hoped that teen pregnancy and birth rates will continue to fall.

References

- 1. The Alan Guttmacher Institute. Into a new world: young women's sexual and reproductive lives. New York: The Alan Guttmacher Institute, 1998.
- Maynard RA, ed. Kids having kids: a Robin Hood Foundation special report on the costs of adolescent childbearing. New York: The Robin Hood Foundation, 1996.
- 3. Ventura SJ, Martin JA, Curtin SC, Mathews TJ. Births: final data for 1997.

DHHS Pub. No. PHS 99–1120; National Vital Statistics Reports, Vol. 47, No. 18. Hyattsville, MD: National Center for Health Statistics, 1999 .

- MacDorman MF, Atkinson JO. Infant mortality statistics from the 1997 period linked birth/infant death data set. DHHS Pub. No. PHS 99–1120; National Vital Statistics Reports, Vol. 47, No. 23. Hyattsville, MD: National Center for Health Statistics, 1999.
- National Center for Health Statistics. Vital statistics of the United States, 1993, Vol. I, natality. DHHS Pub. No. PHS 99–1100. Hyattsville, MD: National Center for Health Statistics, 1999.
- Hollmann FW, Kuzmeskus LB, Perkins RC, Weber EA. U.S. population estimates by age, sex, race, and Hispanic origin: 1990 to 1997. PPL-91R. Washington, DC: U.S. Bureau of the Census, 1998.
- Hollmann FW. U.S. population estimates, by age, sex, race, and Hispanic origin: 1980 to 1991. U.S. Bureau of the Census, Current population reports, P25–1095. Washington, DC: U.S. Department of Commerce, 1993.
- Ventura SJ, Mosher WD, Curtin SC, et al. Trends in pregnancies and pregnancy rates by outcome: estimates for the United States, 1976–96. DHHS Pub. No. PHS 2000–1934; Vital and Health Statistics; Series 21, No. 56. Hyattsville, MD: National Center for Health Statistics, 2000.
- Ventura SJ. Births to unmarried mothers: United States, 1980–92. DHHS Pub. No. PHS 95–1931; Vital and Health Statistics, Series 21, No. 53. Hyattsville, MD: National Center for Health Statistics, 1995.
- Day JC. Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050. U.S. Bureau of the Census, Current population reports, P25–1130. Washington, DC: U.S. Department of Commerce, 1996.
- Spratley E, Taffel S. Interval between births: United States, 1970–77. DHHS Pub. No. PHS 81–1917, Vital and Health Statistics, Series 21, No. 39. Hyattsville, MD: National Center for Health Statistics, 1981.
- Heuser RL. Fertility tables for birth cohorts by color: United States, 1917–73. DHEW Pub. No. HRA76–1152. Rockville, MD: National Center for Health Statistics, 1976.
- Ventura SJ. Births of Hispanic parentage, 1980. DHHS Pub. No. PHS 83–1120; Monthly vital statistics report, Vol. 32, No. 6, supplement. Hyattsville, MD: National Center for Health Statistics, 1983.
- U.S. Bureau of the Census. Marital status and living arrangements: March 1960. Current population reports, P20–105. Washington, DC: U.S. Department of Commerce, 1960.
- Lugaila TA. Marital status and living arrangements: March 1997 (update).
 U.S. Bureau of the Census; Current population reports, P20–506. Washington, DC: U.S. Department of Commerce, 1998.
- Ventura SJ, Mathews TJ, Curtin SC. Declines in teenage birth rates, 1991–97: national and state patterns. DHHS Pub. No. PHS 99–1120; National Vital Statistics Reports, Vol. 47, No. 12. Hyattsville, MD: National Center for Health Statistics, 1998
- Baldwin WH. Adolescent pregnancy and childbearing—growing concerns for Americans. Population Bulletin 1976;31(2). Washington, DC: Population Reference Bureau.
- Centers for Disease Control. Premarital sexual experience among adolescent women—United States, 1970–1988. MMWR Morb Mortal Wkly Rep 1991;39:929–32.

- Forrest JD, Singh S. The sexual and reproductive behavior of American women, 1982–1988. Fam Plann Persp 1990;22:206–14.
- 20. The Alan Guttmacher Institute. Sex and America's teenagers. New York: The Alan Guttmacher Institute, 1994.
- 21. Abma JC, Chandra A, Mosher WD, et al. Fertility, family planning, and women's health: new data from the 1995 National Survey of Family Growth. DHHS Pub. No. PHS 97–1995; Vital and Health Statistics, Series 23, No. 19. Hyattsville, MD: National Center for Health Statistics, 1997.
- Sonenstein FL, Ku L, Lindberg LD, et al. Changes in sexual behavior and condom use among teenaged males: 1988 to 1995. Am J Public Health 1998;88:956–9.
- Centers for Disease Control and Prevention. Trends in sexual risk behaviors among high school students —United States, 1991–1997. MMWR Morb Mortal Wkly Rep 1998;47:749–52.
- 24. Santelli J, Lindberg L, Abma, JC, Sucoff CA. A comparison of estimates and trends in adolescent sexual behaviors in four nationally representative surveys. Paper presented at annual meeting of the Population Association of America. New York: March 25, 1999.
- Zelnik M, Kantner JF, Ford K. Sex and pregnancy in adolescence. Sage Library of Social Research. Vol. 133. Beverly Hills, CA: Sage, 1981.
- Piccinino LJ, Mosher WD. Trends in contraceptive use in the United States: 1982 to 1995. Fam Plann Persp 1998;30:4–10, 46.
- Lindberg LD, Sonenstein FL, Ku L, Martinez G. Age differences between minors who give birth and their adult partners. Fam Plann Persp 1997;29: 61–6.
- Henshaw SK. Abortion incidence and services in the United States, 1995–1996. Fam Plann Persp 1998;30:263–70, 287.
- 29. Henshaw SK. U.S. teenage pregnancy statistics. New York: The Alan Guttmacher Institute, 1998.
- Kaufmann RB, Spitz AM, Strauss LT, et al. The decline in U.S. teen pregnancy rates, 1990–1995. Pediatrics 1998;102:1141–7.
- Koonin LM, Strauss LT, Chrisman CE, et al. Abortion surveillance—United States, 1996. MMWR CDC Surveill Summ 1999;48(SS-4):1–42.
- Henshaw SK. Unintended pregnancy in the United States. Fam Plann Persp 1998;30:24–9, 46.
- 33. Kirby D. No easy answers: research findings on programs to reduce teen pregnancy. Washington, DC: The National Campaign to Prevent Teen Pregnancy, 1997.
- Resnick NM, Bearman PS, Blum RW, et al. Protecting adolescents from harm: findings from the National Longitudinal Study on Adolescent Health. JAMA 1997;278:823–32.
- 35. U.S. Department of Health and Human Services. A national strategy to prevent teen pregnancy: annual report, 1997–98. Washington, DC: U.S. Department of Health and Human Services, 1998.
- 36. National Campaign to Prevent Teen Pregnancy. Get organized: a guide to preventing teen pregnancy. Washington, DC: The National Campaign to Prevent Teen Pregnancy, 1999. Available at http://www.teenpregnancy. org. Accessed September 1, 1999.