

Detailed Methodology for Estimating the Number of Women in Need of Contraceptive Services and Supplies in 2006

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This report describes the methodology used to estimate the number of women in need of contraceptive services and supplies, as well as those in need of publicly supported contraceptive care, according to age, income level and race/ethnicity, for all U.S. states and counties. These updated tabulations are based on 2006 population estimates from the U.S. Census Bureau; income data from the 2006 Current Population Survey (at the national level) and the Bureau of Economic Analysis (at the county level); and characteristics of women from the 2002 National Survey of Family Growth.

KEY DEFINITIONS

Women in Need of Contraceptive Services and Supplies

As in earlier estimates,^{1,2,3,4,5,6} women are defined as in need of contraceptive services and supplies during a given year if they are aged 13–44 and meet the following criteria:

- (1) they are sexually active; that is, they have ever had sexual intercourse;
- (2) they are fecund, meaning that neither they nor their partners have been contraceptively sterilized, and they do not believe that they are infecund for any other reason; and
- (3) during at least part of the year, they are neither intentionally pregnant nor trying to become pregnant.

Because the objective here is to estimate the current annual need for contraceptive services and supplies, the estimates differ from other estimates of women at risk of unintended pregnancy by excluding women relying on contraceptive sterilization to prevent pregnancy. In addition, these estimates consider a woman's contraceptive and pregnancy status over a full year, rather than considering only her status at the time of the survey, to reflect the annual number of women who might seek contraceptive services.

Women in Need of Publicly Supported Services

Some women who need contraceptive services and supplies have difficulty obtaining care because they cannot afford private-sector prices or because they have special needs, such as a requirement for confidentiality. As in past estimates, women are defined as in need of publicly supported contraceptive care if they meet the criteria for needing contraceptive services and supplies, plus at least one of the following:

- (1) they are aged 20 or older and their family income is below 250% of the federal poverty level, or
- (2) they are younger than 20, regardless of family income level.

Estimates of the number of women who need publicly supported contraceptive services and supplies are shown by age (younger than 18, aged 18–19 and aged 20–44) and by poverty status (family income of <100%, 100–132%, 133–184% and 185–249% of the federal poverty level). These disaggregated poverty status numbers allow estimates of the need for publicly supported services to be calculated for poverty levels different from the one used here.

METHODOLOGY FOR ESTIMATION

Calculating the Proportion of Women in Need of Contraceptive Services

The proportion of women in various population subgroups who were sexually active, fecund, and neither intentionally pregnant nor trying to become pregnant was calculated from a special analysis of the 2002 National Survey of Family Growth (NSFG), a nationally representative survey of 7,643 women aged 15–44.

The estimated proportions of women in need are then applied to county-level estimates of the number of women in each of the various population subgroups. However, simply applying the national proportion of women aged 13–44 who are in need to the population of a specific state or county will be inaccurate if the local population differs from the national population in characteristics associated with contraceptive need, such as age, marital status, income, race and ethnicity. Therefore, the estimates presented here take into account differences in levels of need across key demographic subgroups, as well as the characteristics of the population of each state and county.

The population subgroups used in the estimation procedure were defined by age (13–14, 15–17, 18–19, 20–29 and 30–44), marital status (married and living with spouse vs. all other categories), race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and other or multiple races) and family income as a percentage of the federal poverty standard (<100%, 100–132%, 133–184%, 185–249% and $\geq 250\%$). Geographic subgroups were defined by county metropolitan status (central city, metropolitan area outside of a central city and nonmetropolitan) and census region (Northeast, Midwest, South and West). For each of the subgroups, we estimated the proportion who had ever had intercourse; the proportion who had ever had intercourse who were fecund; and the proportion of sexually active, fecund women who during some portion of the year were neither pregnant nor trying to get pregnant.

Because of the large number of population subgroups, a stable, separate estimate for each was not possible using cross-tabulations, even with a survey as large as the NSFG. Where feasible, we therefore used log-linear analysis, a statistical procedure by which significant relationships can be distinguished from the ones that are relatively unimportant, to predict the likelihood that the women in a subgroup were sexually active, fecund and neither pregnant nor trying to become pregnant.⁷ The log-linear procedure fits a model to the data using the most important relationships among the variables and estimates the relevant proportions for each subgroup.

Where women's characteristics were likely to differ according to their age or marital status, we divided women along these lines before performing log-linear analyses: To estimate the proportions of women who were sexually active, we performed separate log-linear analyses for unmarried teenagers and unmarried adults; to estimate the proportions who were fecund, we separated unmarried and married adults; and to estimate the proportions who were neither pregnant nor trying to become pregnant, we separated unmarried and married women. When

log-linear analysis was not appropriate, we estimated proportions from similar subgroups, or used other information (described below).

- *Sexual activity.* The proportion of unmarried women aged 15–19 who had had intercourse was estimated from the log-linear analysis. The model indicated that the proportion was highest among older teenagers (those aged 18–19), blacks, and teenagers who live in central cities or nonmetropolitan areas. Hispanic teenagers were slightly less likely than others to be sexually active, and family income and region of the country had little relation to sexual activity rates.

For women younger than 15, we estimated that 1.2%–6.3% were sexually active, depending on their race/ethnicity, metropolitan status and income. These estimates are based on data from the 2002 NSFG on age at first intercourse. According to the Youth Risk Behavior Surveys of high school students, the proportion of teenagers who are sexually active has changed little since 2002, so no adjustment was made to the NSFG results.

A separate log-linear analysis was used to estimate the proportion of unmarried women aged 20–44 who were sexually active. Among unmarried women aged 20–29, rates ranged from 89% to 96% depending on race/ethnicity, region and income. The rates of women aged 30–44 ranged from 94% to 99%. All married women were assumed to be sexually active.

- *Fecundity.* Sexually active women were considered to be infecund (unable to become pregnant) if they said they were sterile because of an operation or for any other reason, if their husband or cohabiting partner was sterile or if they were subfecund (they said it was difficult for them to become pregnant). Generally, most infecundity is due to women's use of contraceptive sterilization. A report of subfecundity, however, may not mean that it is impossible for a woman to become pregnant. Indeed, 51% of women who said it was difficult for them to become pregnant were using a reversible contraceptive. Therefore, subfecund women were considered to be in need of contraceptive services and supplies if they were using a contraceptive method.

The proportions of sexually active teenagers who were infecund were too low for log-linear analysis, so within the following broader groupings, women were assigned the same proportion: 15–17 and unmarried, 99.5% fecund; 15–17 and married, all fecund; 18–19 and unmarried, 99.4% fecund; and 18–19 and married, 95% fecund. All women younger than 15 were treated as fecund.

Separate log-linear analyses were used to estimate the proportions of married women aged 20–44 and of sexually active unmarried adults who were fecund. The analyses showed that older women and married women were most likely to be infecund. Among unmarried women, blacks, especially those of low income, were most likely to be infecund, presumably because of contraceptive sterilization.

- *Pregnant or trying to become pregnant.* Overall, 19% of fecund married women and 5% of fecund, sexually active unmarried women were intentionally pregnant or seeking pregnancy. According to log-linear analysis, the proportion of married women who were intentionally pregnant or trying to become pregnant was above average among those with incomes over 250% of the poverty level. Among unmarried women, it was above average among Hispanic and black women and those living in central cities.

Although the time that women are infertile because of pregnancy and the immediate postpartum period lasts less than 12 months, some women spend a number of months trying to get pregnant and are therefore not at risk for unintended pregnancy. For women who spend a

number of months trying to get pregnant, the period during which they are not in need of contraceptive services and supplies can span the entire year.

To convert the point-in-time proportions to the proportion who were pregnant or seeking pregnancy for an entire calendar year, we used Dryfoos's estimates of the number of months required for each live birth, which take into account pregnancy loss and the time needed to conceive: 17.3 months for women aged 15–19, 16.3 for those aged 20–29 and 21.7 for those aged 30–44.³ Women categorized as pregnant or trying to conceive for an entire calendar year are those who began to seek pregnancy before the beginning of the year, so that their period of being or trying to be pregnant encompassed the entire 12 months. For women aged 15–19, this would include those who started trying during the 5.3 months before the year began; the proportion pregnant or trying for the entire year would be 5.3 divided by 17.3, or .306. Accordingly, the proportion of teenagers who were pregnant or trying at a point in time was multiplied by .306 and the results subtracted from 1.0 to get the proportion of women who, at some time during the year, were neither pregnant nor trying to conceive. The correction factor for women aged 20–29 was .264, and it was .447 for women aged 30–44.

County Population Estimates

To estimate the population of reproductive-aged women in each subgroup in each county, we started with published 2006 Census Bureau county estimates of the number of women by age, race and ethnicity.⁸ The age/race/ethnicity groups were then divided into married and not married in the same proportions as in a special tabulation of the 2000 census that was used to create the need estimates for 2000. To distribute the age/race/ethnicity/marital status groups according to poverty status, we used the poverty distribution in the special census tabulation, which we then adjusted using the change between 1999 and 2005 in each county's mean per capita personal income as reported by the Bureau of Economic Analysis.⁹ We used the base year 1999 because the 2000 census reported 1999 income data; we used 2005 because that was the most recent year for which county-level economic data were available at the time of this analysis. The poverty distribution was further adjusted to reflect the national change between 1999 and 2006 in the poverty status distribution found in the Current Population Survey.¹⁰ We did not adjust the population data for the census undercount, which especially affects minority populations.

Final Estimates of Women in Need

To derive our final estimates of women in need of contraceptive services and supplies, we applied the estimated *proportion* of women in need of contraceptive services and supplies for each age, race/ethnic, marital status and poverty subgroup to the *number* of women per county in each subgroup. In addition, proportions of women in need varied according to the region of the country and whether the county was classified by the U.S. Office of Management and Budget as a center city, a metropolitan area outside of a central city or a nonmetropolitan county.

As with all estimates, a certain amount of error in our figures is unavoidable. Although the population numbers on which the estimates are based should be generally accurate, minority groups in some areas were undercounted, as mentioned above. In addition, the estimated proportions of women who are fecund, sexually active, and not pregnant or trying to become

pregnant are based on national and regional data that may be somewhat high or low for a particular county.

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