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## Decade of Decline: Fertility rates of 15- to 17-year-olds decrease in Colorado in the 1990s

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### Introduction

Births to teenagers constitute an area of concern to society as a whole, and to parents, health care providers, and sexually active high school students in particular. The teen fertility rate was a subject of national inquiry throughout the last half of the 20<sup>th</sup> century, and a focus of program intervention as well.

Teen mothers are less likely to complete high school and more likely to end up on public assistance than teens who delay childbearing. Furthermore, the children of teen mothers are at increased risk of low birth weight, prematurity, mental retardation, poverty, welfare dependency, poor school performance, insufficient health care, and inadequate parenting. In fact, teen pregnancy and childbearing cost U.S. taxpayers at least \$7 billion annually in direct costs and lost tax revenues.<sup>1</sup> For these reasons, a close eye has been kept on the teen fertility rate for many years. Over time, the rate declined substantially from highs in the late 1950s to lows at the end of the 1970s; but a sharp increase in the late 1980s prompted renewed concern and increased efforts during the 1990s to address the problem.

During the decade of the 1990s the rate resumed a decline, ending the decade and beginning the new century in 2000 with rates nearly as low as those achieved in the late 1970s. In 2001, the U.S. and Colorado rates reached new lows not previously seen, with sharp drops from the rates achieved in the year 2000, and new national and state records attained were below the lows of the 1970s. Nonetheless, there were more than 450,000 births to teens (19 years and younger) in the U.S. in 2001, and in Colorado there were more than 7,000 births to teens.

### Methodology

This report uses Colorado Vital Statistics data, which are derived from the birth certificates of all live-born infants in Colorado. Population estimates used to calculate age-

specific fertility rates come from the Colorado Department of Local Affairs, Demography Section. This report focuses on births to teens ages 15-17. Because of the relatively small number of births to teens younger than 15 each year in Colorado (approximately 100), these data are not discussed in this report.

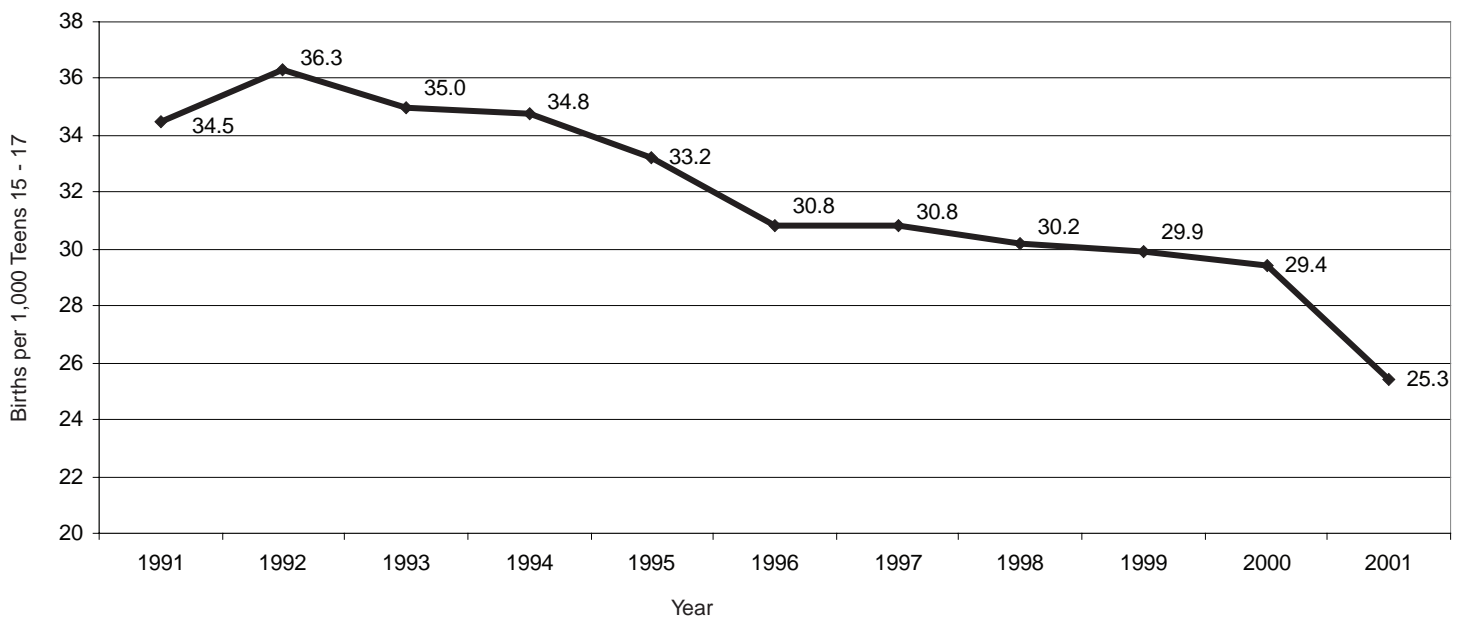
Data contained in this report describing sexual behavior of adolescents come from the Youth Risk Behavior Survey (YRBS). The YRBS is administered across the nation in the spring of odd-numbered years (spring of 1997, 1999, 2001, etc.) to a random selection of high school students (grades 9-12) attending public schools. The survey measures student behaviors in the six categories which have the greatest correlation with adolescent mortality and morbidity. These areas include behaviors that result in unintentional and intentional injuries; tobacco use; alcohol and other drug use; sexual behaviors that put students at risk of unintended pregnancy, HIV infection and sexually transmitted diseases; dietary behaviors; and physical activity. In Colorado, the YRBS was

conducted in 1995, 1997, and 2001 with a random sample of public high school students in the state. While the national survey has a large enough sample that the data can be generalized to all high school students in grades 9-12, the Colorado Youth Risk Behavior Surveys for 1997 and 2001 did not have large enough sample sizes to generalize to all public high school students in grades 9 through 12 in Colorado. Comparisons of the surveys across time should be made cautiously.

## Results

The Colorado fertility rate for teens ages 15-17 declined substantially during the 1990s, from a high of 36.3 births per 1,000 teens in 1992 to a low of 29.4 in 2000. This change constituted a decline of 19 percent over eight years. In 2001, the teen fertility rate dropped to 25.3 (Figure 1). This 4-percentage point change in one year represented a decline of 14 percent. The rate of 25.3 is the lowest rate in the state since statistics were first compiled for the 15- to 17-year-old age group beginning in 1980.

Figure 1. Teen fertility rate, ages 15 - 17, Colorado 1991 - 2001



The number of births declined from 2,612 in 2000 to 2,340 in 2001 (Figure 2). The 2001 number was the smallest number of teen births in the state since 1991. The population estimates of females ages 15-17 used throughout the decade rose gradually from 62,629 in 1991 to 91,566 in Colorado in 2001, an increase of 46 percent over the ten years. Population estimates rose by an average of 4.6 percent per year.

### Teen fertility by race and ethnicity

The 15- to 17-year-old fertility rate for Black and White non-Hispanic groups declined in Colorado between 1993 and 2001 (Figure 3). Between the two years, the teen fertility rate in the White non-Hispanic group ages 15-17 declined by 23 percent. It declined by 25 percent among Blacks and rose by one percent among White Hispanics. The number of White non-Hispanic births was 763, the lowest since at least 1980. The number of Black births was 162, the lowest since 1985. The number of White Hispanic births was 1,348, the first year since 1992 that the number actually declined.

**What is a fertility rate and why is it used?**

The number of health events in a geographic region is influenced by the number of people at risk in that area. A rate, in this case, a fertility rate, is used to measure increases or decreases in the number of births *independent of* changes or differences in the size of the population. This allows for comparisons to be made over time and across regions as the differences in population size are taken into account, or “controlled for.”

The **fertility rate** is measured by the number of *live births* per 1,000 women of childbearing age (commonly ages 15-44). An age-specific rate can be calculated to measure change for a particular age group. The age-specific fertility rate for teens aged 15-17 is calculated as:

$$\frac{\text{Number of births to teens ages 15-17}}{\text{Number of 15-17 year old females in the population}} \times 1000$$

The fertility rate is frequently confused with the pregnancy rate. The “**pregnancy**” rate is the number of *conceptions* per 1,000 women, calculated from live births, stillbirths, induced abortions and spontaneous abortions (miscarriages). The pregnancy rate may be unreliable due to under-reporting of induced and spontaneous abortions; consequently, such rates are often not available.

Figure 2. Total number of teen births, age 15 - 17, Colorado 1991 - 2001

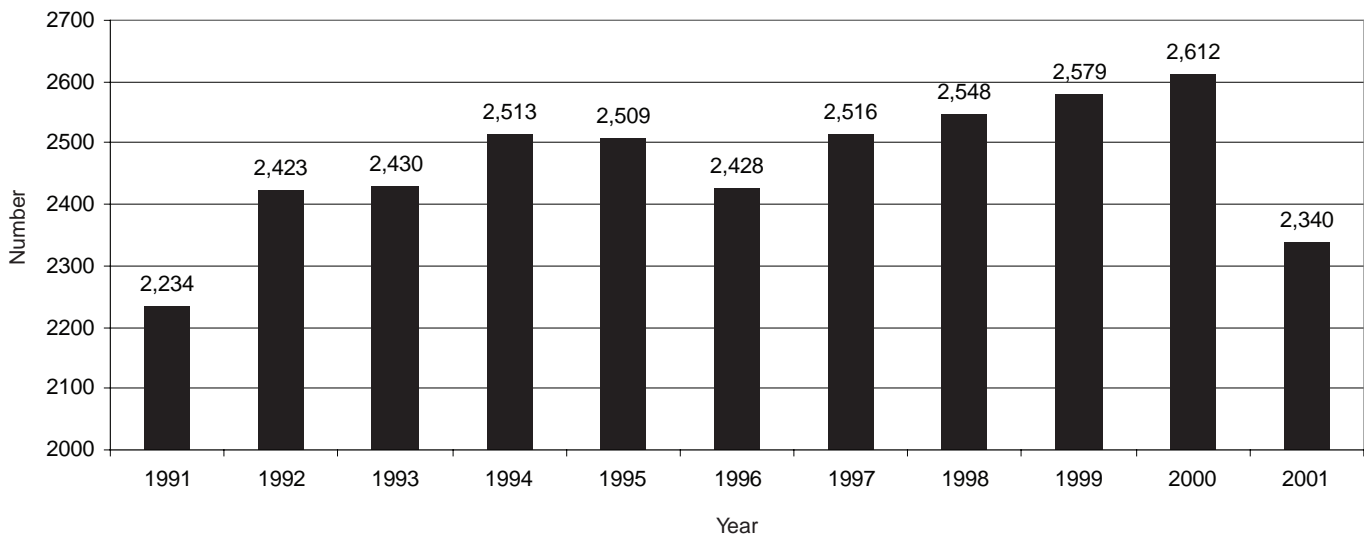
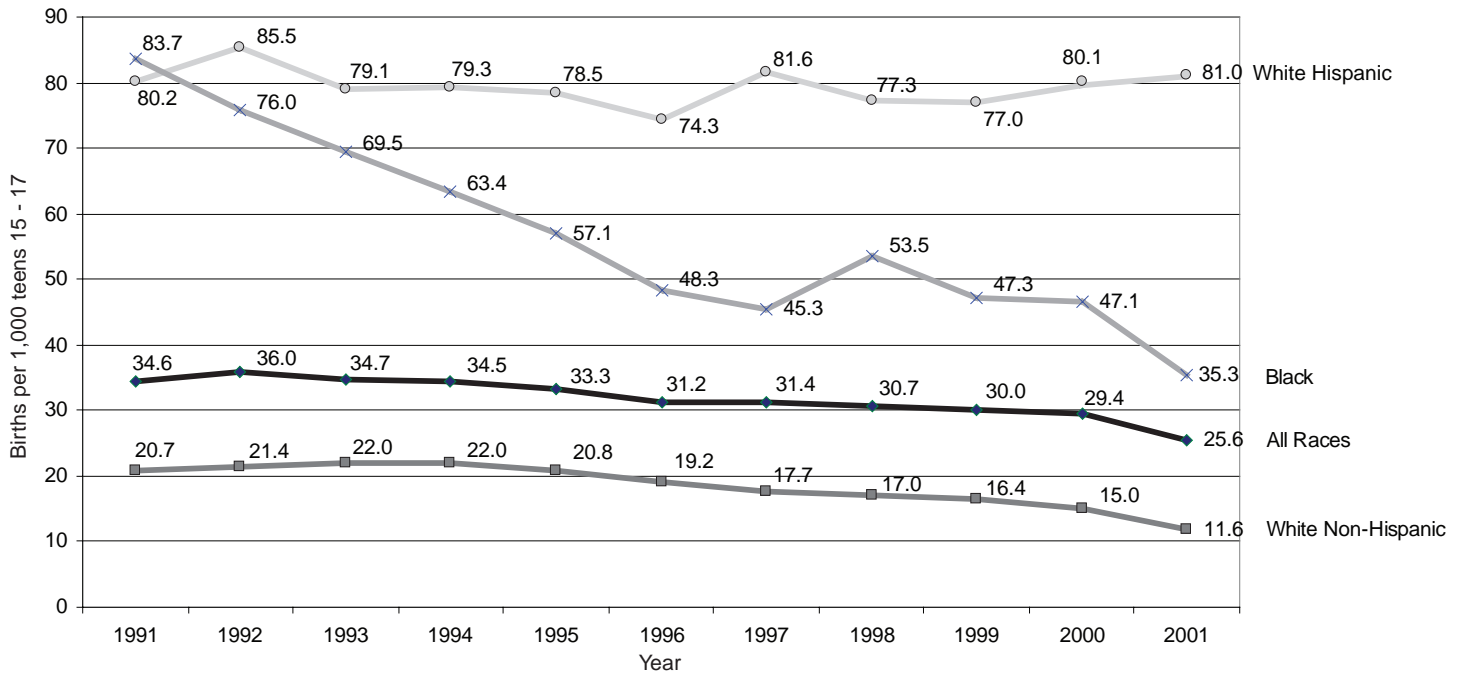


Figure 3. Colorado teen fertility rates by race/ethnicity, 1991 - 2001



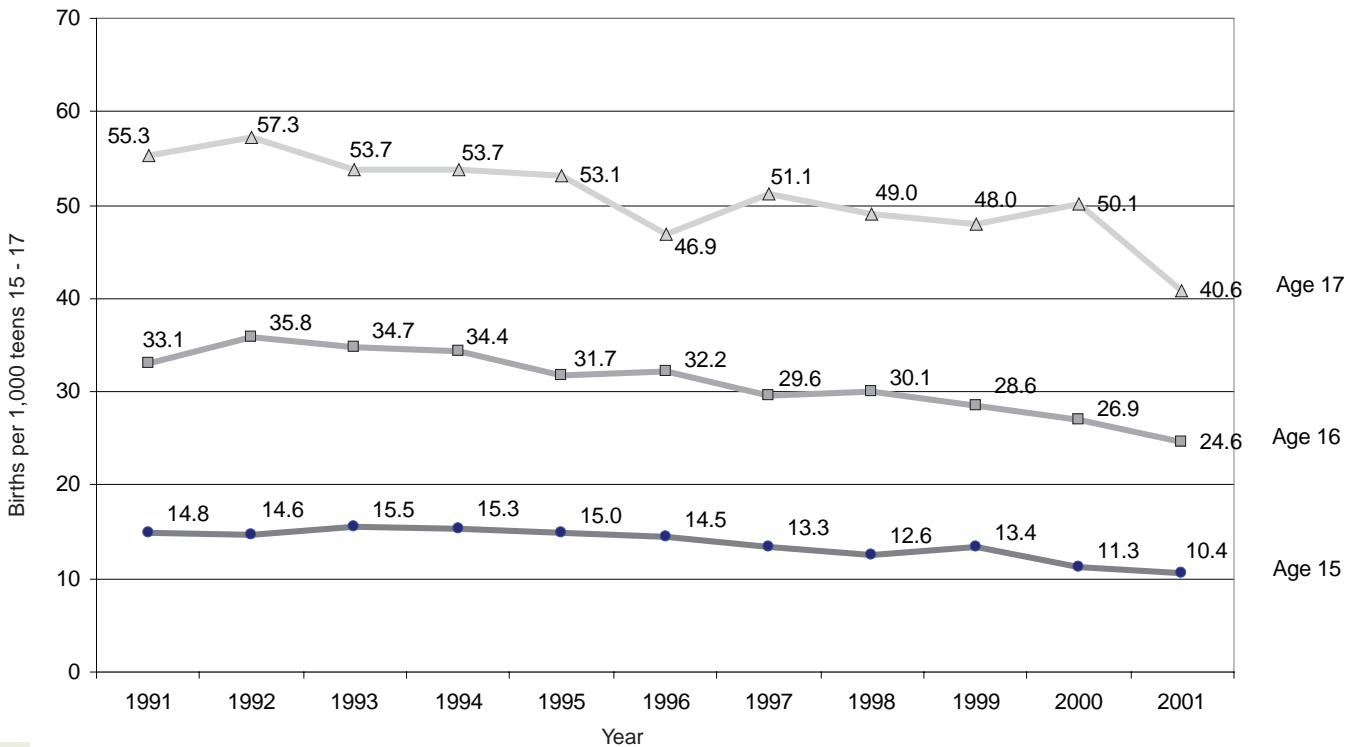
Note: Rates by race/ethnicity are based on population estimates which may differ from estimates used for state and county rates

### Teen fertility by age

Figure 4 shows the decline in fertility rates by single year of age for 15- to 17-year-olds. Although the change between 2000 and 2001 was most noticeable in the 17-year-old age

group, rates declined for each age. Between 2000 and 2001, rates declined by 19 percent among 17-year-olds, by 8 percent among 16-year-olds, and by 7 percent among 15-year-olds.

Figure 4. Colorado single year age-specific fertility rates, 1991 - 2001

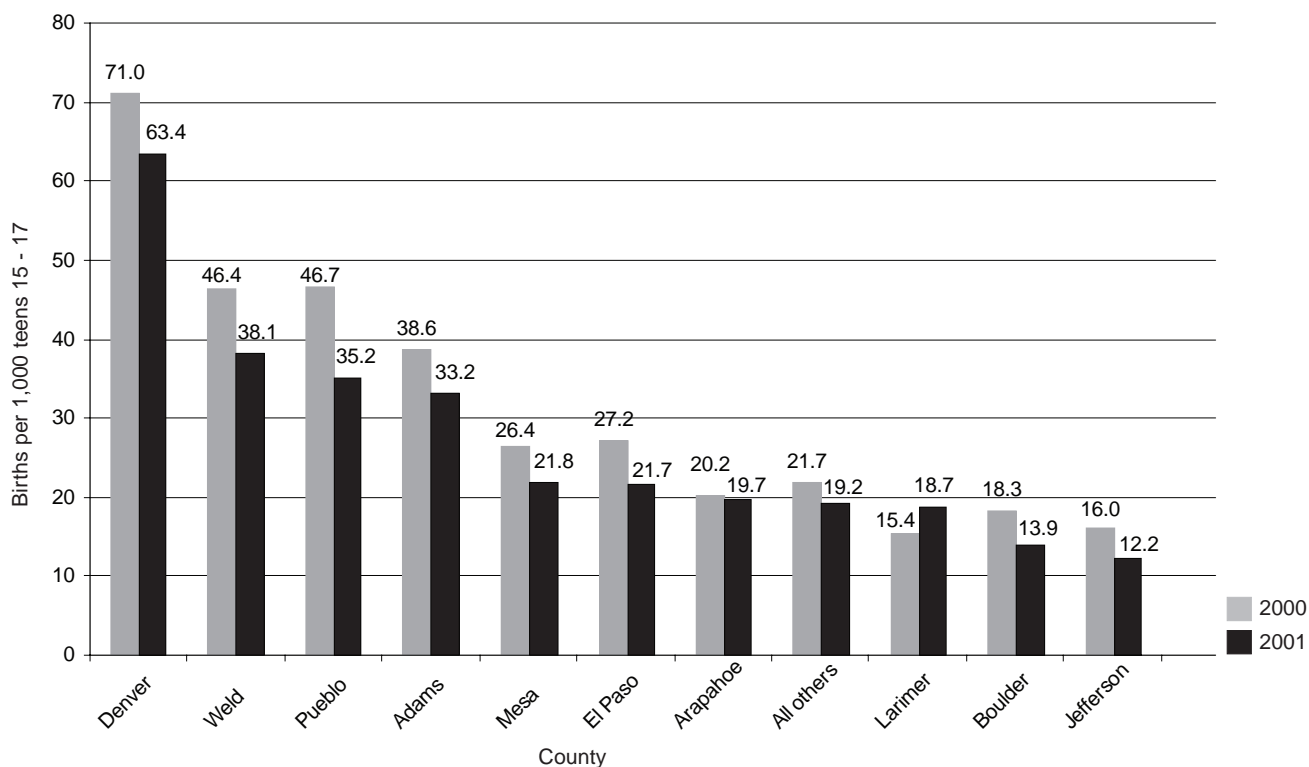


## Teen fertility by area

Declines in fertility rates to teens ages 15-17 were more likely to occur in large counties in Colorado, and the rates of virtually all the large counties were lower in 2001 than in 2000 (Figure 5). The sharpest declines were in Pueblo (25 percent); Boulder and Jefferson (24 percent); and El

Paso (20 percent). The declines in other large counties amounted to 18 percent for Mesa and Weld, 14 percent for Adams, and 11 percent for Denver. (Note: Denver's rate remains more than twice as high as the rate of many other large counties.) A small decline occurred in Arapahoe, and a small increase occurred in Larimer. The overall decline in all other counties was 12 percent.

Figure 5. Colorado teen fertility rates by county, 2000 - 2001



## Teen fertility in Colorado compared to the U.S. and other states

The Colorado rate dropped 14 percent between 2000 and 2001, while the U.S. rate dropped 8 percent. The U.S. rate is now the lowest on record, and the 14 percent decrease for Colorado is the sharpest drop in at least 25 years. Colorado's rate (25.3) and the U.S. rate (25.3) in 2001 are the same, although Colorado's rate had been lower than the U.S. rate throughout the decades of the 1980s and 1990s.

Colorado's 2001 rate does not compare favorably to other states. In that year, 31 other states had lower rates than Colorado.

## What is responsible for the decline in teen fertility in Colorado?

Between 2000 and 2001 the teen fertility rate decreased substantially for Black and White non-Hispanics, and in most areas of the state. It is not possible to ascertain the precise reasons why the fertility rate fell by such a large amount between 2000 and 2001, continuing a downward trend since 1992. The factors that contribute to teen fertility are numerous, as are the factors that contribute to the change in fertility rates.

Colorado Youth Risk Behavior Survey (YRBS) data collected in 1995, 1997, and 2001 provide some understanding of changes in risk behavior over time. The proportion of teens in high school that had ever had sex was estimated at 47 percent in 1995, 41 percent in

1997, and 42 percent in 2001. These data suggest that fewer teens were having sex in 1997 than in 1995, but that about the same proportion were having sex in 2001 (42 percent) as in 1997 (41 percent). Nationally, the prevalence of sexual activity did not change significantly between 1997 and 2001 either.

Information on contraceptive use is also available from the YRBS. The proportion of teens reporting condom use was 53 percent in 1995, 59 percent in 1997, and 67 percent in 2001 (among those having sex in the last three months). Over the entire period, the use of condoms appeared to have increased considerably: by 11 percent between 1995 and 1997, and by 14 percent between 1997 and 2001, for an overall increase of 26 percent over the six years.

In 2001 only, the YRBS obtained new information for a measure termed “responsible sexual behavior.”<sup>2</sup> The measure is composed of answers to three questions: those students who reported that they had never had sexual intercourse; those who had had sexual intercourse but not within the three months preceding the survey; and those who had used a condom the last time they had sexual intercourse in the three months preceding the survey. A total of 90.4 percent of the Colorado youth surveyed fell into this category. This is slightly higher than the median (87.1 percent) of the states that conducted the YRBS.

YRBS information is also available on birth control pill use. The proportion of females who reported using birth control pills (among those having sex in the last three months) was 24 percent in 1995, 17 percent in 1997, and 21 percent in 2001. No trend is apparent with regard to pill use.

Longer-acting hormonal methods of contraception have also increased in popularity among teens, beginning with the availability of Norplant in 1991. In 1992 the FDA approved Depo-Provera, a contraceptive injection that is repeated every three months, and its use has grown rapidly, especially among young women. In addition, EC (emergency contraception), taken within 72 hours of unprotected intercourse, was approved in 1998 and is increasingly available. Depo-Provera is currently chosen by one-quarter of all teens served by family planning programs

statewide<sup>3</sup>. The next Youth Risk Behavior Survey will be carried out in 2003 and will include questions about Depo-Provera and other methods.

The Colorado Abstinence Education Program, the state’s abstinence effort maintained through federal funding, has supported a number of local programs in Boulder, Denver, El Paso, Mesa, Pueblo, and Weld counties since 1997. A variety of other abstinence programs have been supported by local and some direct federal funds. Declines between 2000 and 2001 occurred in the teen fertility rates of the counties with abstinence programs, as well as in virtually all other counties in the state.

## Summary

A combination of factors has apparently influenced the decline in teen fertility seen during the decade of the 1990s and into 2000 and 2001. More sexually active teens report using condoms, and more teens are abstinent.

The proliferation of new contraceptive options and programs available to help teens make healthy choices about sexual activity seem to be contributing to the decline in fertility. Continuation of programs and services to teens in Colorado will likely help future rates to decline even further. Continual monitoring of adolescent sexual behavior through the Youth Risk Behavior Survey will be important for understanding the link between health risk and protective behavior and health outcomes for teens in Colorado.

## References

- 1 The National Campaign To Prevent Teen Pregnancy, Fact Sheet: Recent Trends in Teen Pregnancy, Sexual Activity, and Contraceptive Use, 2002. Accessed online @ [http://www.teenpregnancy.org/resources/reading/fact\\_sheets/rectrend.asp](http://www.teenpregnancy.org/resources/reading/fact_sheets/rectrend.asp)
- 2 Centers for Disease Control and Prevention. Surveillance Summaries, June 28, 2002. MMWR 2002; 51 (No. SS-4):48.
- 3 From 2002 data on contraceptive use among teens 15-17 in statewide family planning programs, Women’s Health Section of the Colorado Department of Public Health and Environment.