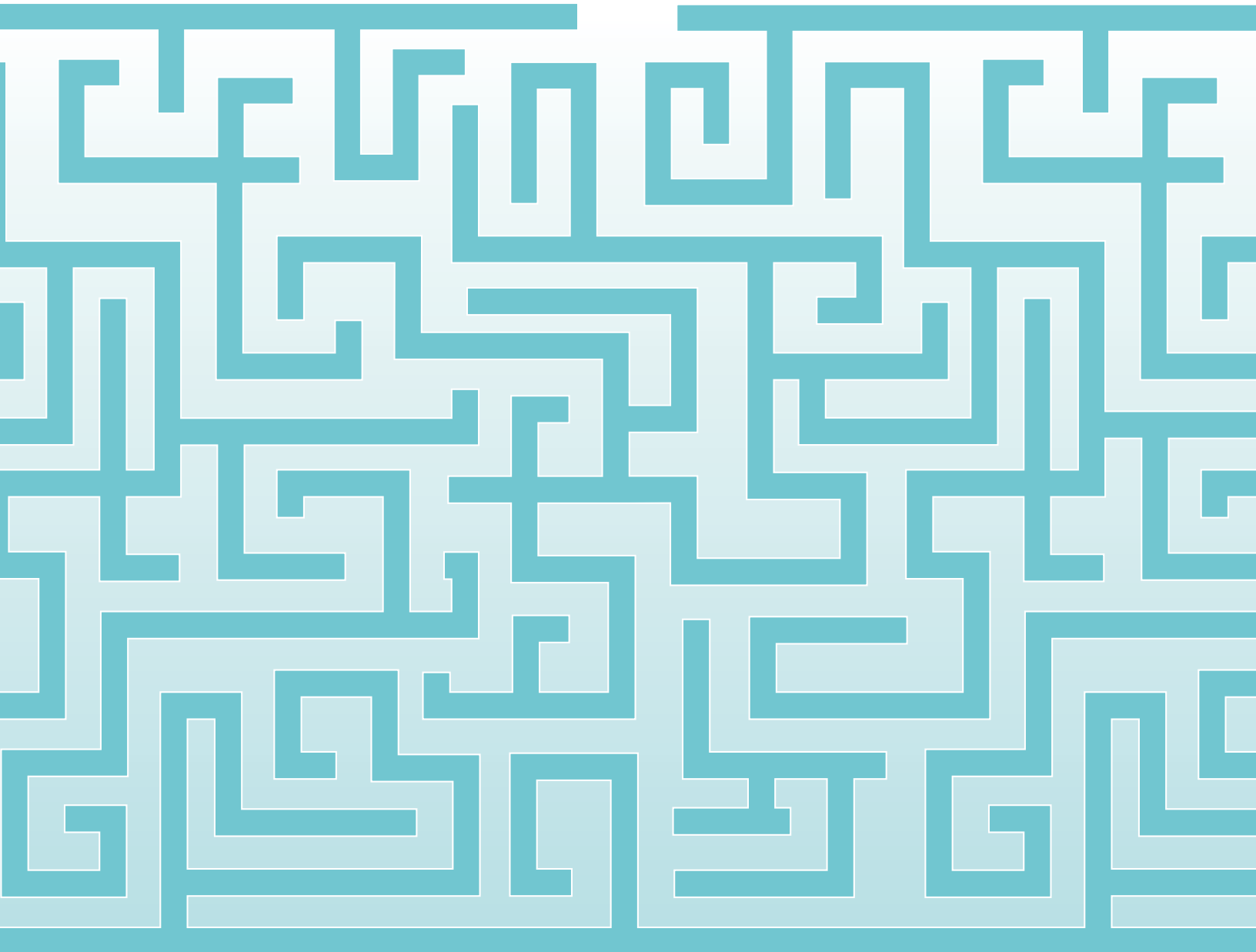


# Strategies

for Adolescent Pregnancy Prevention



The American College of Obstetricians and Gynecologists  
*Women's Health Care Physicians*

This document has been developed by the American College of Obstetricians and Gynecologists (ACOG) Committee on Adolescent Health Care to serve as a resource for ACOG Fellows and Junior Fellows who have an interest in adolescent health care and wish to become active in community efforts to prevent adolescent pregnancy. This document discusses various strategies for preventing adolescent pregnancy; describes models of effective and replicable programs; provides a selection of current literature on teen pregnancy prevention programs and evaluations; and lists relevant publications, other resources available on the subject, and useful Internet sites. Referral to these sources does not imply the endorsement of ACOG. This document is not meant to be comprehensive; the exclusion of a resource does not reflect the quality of that resource.

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**E**ach year in the United States, about three-quarters of a million adolescents younger than 20 years become pregnant, resulting in the highest adolescent pregnancy rate of any developed nation (1, 2). In 2002, there were an estimated 757,000 pregnancies among teenagers aged 15 to 19, which resulted in an estimated 425,000 live births, 215,000 induced abortions, and 117,000 fetal losses (3). About 82% of these adolescent pregnancies are unintended – and more than one-quarter end in abortion (1).

The good news is that teen pregnancy and birth rates have been declining in recent years. Researchers have concluded that the reasons for the declines are increased abstinence and changes in contraceptive practices. One recent study found that most of the decline (86%) in US teen pregnancy rates is the result of improved contraceptive use, while a smaller proportion of the decline (14%) can be attributed to delaying the initiation of sex among adolescents (4). Despite the declines in teen pregnancy rates, far too many teenagers become pregnant each year and many go on to give birth. The consequences of teen pregnancy and childbearing can be quite detrimental to the adolescent, to the children born to teen mothers, and to society as a whole (5, 6, 7).

This report presents an overview of strategies for adolescent pregnancy prevention. Part One summarizes the data on teen sexual and contraceptive behavior, teen pregnancy and birth rates, and the consequences of teen childbearing. Part Two presents an overview of the different types of adolescent pregnancy prevention programs highlighted in this report: programs that provide sexuality and family-life education, programs developed to improve adolescents' use of and access to family planning services, and programs that are designed to enhance adolescents' life options and expand their worldview. Part Three describes model programs of each type, which were selected because they exemplify promising approaches to teen pregnancy prevention.

## *Issues Surrounding Adolescent Pregnancy*

### **Sexual Activity and Contraceptive Use**

There are two major surveys that track adolescent sexual behavior in the United States. The Youth Risk Behavior Survey (YRBS) is a national study of high school students in public and private high schools conducted by the Centers for Disease Control and Prevention that measures high priority, health risk behaviors among adolescents at the national, state, and local levels. Starting in 1991, YRBS surveys have been conducted every two years. According to the YRBS, the percentage of high-school girls who reported having had sexual intercourse declined from 51% in 1991 to 46% in 2005. For high-school boys, the percentage who reported having had sexual intercourse declined from 57% to 48% during this time period (8).

The second survey is the National Survey of Family Growth (NSFG), a study conducted periodically by the National Center for Health Statistics. Because this survey

includes adolescents who are out of school and who may be at higher risk for certain behaviors, it is more representative of the adolescent population as a whole. Analyses of the NSFG show that the percentage of teen girls aged 15 to 19 who had ever had sexual intercourse declined from 52% to 47% between 1995 and 2002. For boys, the decline was greater – from 55% to 46% over this seven year period (9).

These averages mask important differences by race, ethnicity, and age in adolescent sexual behavior. In 2002, 57% of non-Hispanic black teen girls reported that they had had sexual intercourse, compared to 46% of non-Hispanic white girls and 40% of Hispanic girls. The percentages for teen boys were 63% (non-Hispanic black), 55% (Hispanic), and 41% (non-Hispanic white). The older the teen, the more likely he or she is to have had sexual intercourse. About one in seven teens has ever had sex by age 15. However, by the time a teen reaches the age of 19, 70% of males and 75% of females have had sex (9).

Two factors that place teens at risk of pregnancy (and sexually transmitted diseases (STDs)) are having multiple sexual partners over time and having an older partner. According to the NSFG 2002, almost one in ten sexually experienced male and female adolescents reported having four or more sexual partners in the previous 12 months (10). Research by Child Trends found that in 2002, 13% of girls aged 15 and younger reported a first sexual experience with an individual who was three or more years older. More than one in four babies born to mothers aged 15 to 17 was fathered by someone who was five or more years older. And young teens who have had sex with an older individual reported a larger number of sexual partners during high school (11).

Involuntary sex for adolescents is a matter of great concern. Analyses of the NSFG 2002 found that 13% of females who first had sex before the age of 20 reported that they “really didn’t want [their first sexual intercourse] to happen at that time.” The younger the girl when she first had sexual intercourse, the more likely she was to report that this experience was unwanted. Among females who were 14 or younger at first sexual intercourse, more than one-quarter (27%) did not want their first sexual experience to happen compared to 12% of those aged 15 to 17 and 5% of those aged 18 to 19 (10).

Between 1995 and 2002, there was a marked increase in contraceptive use among teens. Among never married, adolescent females, 83% used some method of contraception at last sex in 2002, up from 71% in 1995<sup>a</sup>. The percentage of never married, adolescent males who reported using some method at last sex increased from 82% to 91% over these seven years (12). Much of the increase in contraceptive use among teens has been the result of greater condom use. Whereas 38% of females reported that their partners used a condom at most recent sex in 1995, the proportion increased to 54% in 2002. During this time period, the percentages of males reporting condom use at most recent sex increased from 64% to 71% (13).

A smaller increase in the use of the pill and other hormonal methods was reported by adolescent females during this time period. In 1995, 25% of females reported using the pill and 7% reported using another hormonal method. In 2002, the percentages had increased to 38% of teen girls using the pill and 9% using another hormonal method (13).

Family income has some impact on sexual behavior. Low-income girls (family income less than 149% of the federal poverty level [FPL]) aged 15–19 are slightly more likely than higher-income girls (family income above 300% of the FPL) of the same age to become sexually active before 20 years of age. Higher-income girls are more likely than their low-income counterparts to use contraception at first intercourse. Differences in current or recent contraceptive use by socioeconomic status are smaller than for contraceptive use at first intercourse (14).

## Babies Born to Adolescent Mothers

Overall, there have been significant decreases in teen birth rates over the last decade or more. Analyses of live birth certificates showed that 414,406 babies were born to adolescent females aged 15–19 in 2005. The 2005 birth rate for this age group (40.4 births per 1,000 females) was 35% lower than the rate for the recent peak in 1991 when there were 61.8 births per 1,000 adolescent females (15).

Among girls aged 14 and younger, there was a slight decrease in the birth rate from 2004 to 2005 when 6,717 babies were born to these young girls. The birth rate for teen girls aged 14 and younger was 0.7 births per 1,000 females in 2005, which was one half the peak rate reported in 1994 (1.4 per 1,000) (15). At the same time, the percentage of births to unmarried adolescents has increased significantly over the last several decades. In 2005, 83% of the births to adolescents aged 15 to 19 were to unmarried teens, compared to only 15% of births to unmarried teens in 1960 (15, 16).

While girls from all socioeconomic backgrounds become pregnant and give birth, pregnancy and childbirth are more common among low-income girls. This is because low-income girls are somewhat *more likely* than their higher-income counterparts to have sex and somewhat *less likely* to use contraceptives or use them successfully (14). Also, higher-income teenagers who become pregnant unintentionally are more likely to have abortions than their low-income counterparts, making these girls more likely to give birth.

## Impact of Teenage Childbearing

Teen childbearing has serious consequences for teen mothers, their children, and society as a whole. More than 90% of teenagers who give birth elect to raise their infants; they rarely place them for adoption (17). Compared to women who delay childbearing until age 20–21, teen mothers are much less likely to finish high school, to remain unmarried, and to raise their children without a partner. Teen fathers are also less likely to finish high school and more likely to have lower earnings. The impact of teen childbearing is strongest on the babies born to teen mothers who—compared with the infants of women who delay childbearing until age 20–21—are more likely to be low birth weight, grow up poor, live in single-parent households, and enter the child welfare system. Daughters of teen mothers are at high risk of becoming teen mothers themselves while the sons of teen mothers have a significant probability of incarceration as adults (7).

The public costs of teen childbearing are substantial because adolescent mothers and their children have significant needs for public assistance and social services. It is estimated that the annual costs to taxpayers of births to young women who became mothers at age 19 or younger (compared to the taxpayer costs of births to women aged 20–21) were at least \$9 billion in 2004. This estimate was conservative because it included only certain categories of costs – lost tax revenues and the costs of public assistance, health care for the children, child welfare, and incarceration (7).

# Adolescent Pregnancy Prevention Strategies

Educators, youth-serving organizations, families, and health care professionals have joined together in many communities to help adolescents postpone pregnancy. Adolescent pregnancy prevention programs often focus on one or more objectives: 1) to educate and assist adolescents in increasing their ability to abstain from or delay sexual intercourse, 2) to improve adolescents' use of and access to family-planning services, and 3) to enhance adolescents' life options by providing alternatives to early pregnancy and childbearing.

A growing body of evaluation research has identified a number of effective programs to help teens make healthy choices regarding sex and contraception. Three types of programs are highlighted in this report. The first type provides sexuality and family-life education in schools or community settings, and emphasizes the importance of delaying sex (for teens who are not yet sexually active) and/or increasing contraceptive use (for teens who are already sexually active). The second type of program makes condoms and other forms of contraception available to teens through condom availability programs in high schools, teen health centers, and clinics. The third type of program enhances the life options of adolescents through employment and community service, tutoring and mentoring, reproductive health services, and sex education.

## Programs That Provide Sexuality and Family-Life Education

Throughout the United States, public schools, youth organizations, religious groups, and health care professionals have developed and implemented sexuality and family-life education programs that are designed to inform teenagers about sexual behavior, human relationships, reproduction, and contraception. The most promising of these programs aim to influence teen sexual and contraceptive behavior. It has been shown consistently that implementation of programs of this type does not increase sexual activity (18, 19).

### • Sex and family-life education in schools

Sexuality and family-life education programs typically are implemented in schools. There is considerable variation in the focus and content of these programs – and most of these programs have not been rigorously evaluated. Because there are no agreed-upon national standards for sexuality education, the issues addressed in these school courses vary by state. According to the Guttmacher Institute, 19 states and the District of Columbia mandate that public schools teach sex education. Twenty-two states stipulate that schools stress abstinence in their sex education programs and 10 states require that the program cover abstinence (20, 21).

Largely in response to the AIDS epidemic in the 1980s, more states – 35 states and the District of Columbia – have mandated that STD/HIV education be provided to students. Twenty-five states require STD/HIV education to stress

abstinence while 11 states require that the programs cover abstinence. Only about half of the states (18) that have mandated STD/HIV education programs stipulate that the curriculum cover contraception and no state requires that the program emphasize contraception (20, 21).

Access to comprehensive sex and STD/HIV education in the schools is limited by parental consent and “opt-out” clauses that allow parents to remove their children from instruction. In three states, parental consent is necessary for students to participate in these programs. A much larger number of states – 35 states and the District of Columbia – allow parents to remove their children from instruction (20, 21).

While state law sets the parameters for sex and STD/HIV education, local communities typically establish policies regarding the specific content of these programs. More than two out of three public school districts have a policy to teach sex education, while the remaining districts give individual schools or teachers the leeway to select the curriculum. Of the public school districts that have a policy to teach sex education, 86% require that the programs promote abstinence. More than one-third (35%) of public school districts require that abstinence be taught as the only option for unmarried people, and either prohibit or limit the discussion of contraception (22).

More than nine out of ten teachers believe that students should be taught about contraception (although one out of four is prohibited from doing so) (23). Between 1988 and 1999, the proportion of teachers who taught abstinence as the only way to prevent pregnancy and STDs increased from one out of ten to one out of four. This trend does not coincide with the views of adults, 82% of whom support comprehensive sex education that teaches students about both abstinence and other methods of preventing pregnancy and STDs (24). The losers are the teens. In 2002, only 62% of sexually experienced teens had received instruction about contraception before they first had sex, compared with 72% in 1995 (21).

### • Evaluations of sex education and family-life programs

Over the last two decades, there have been a number of rigorous evaluations to determine if sexuality education and family-life program interventions changed teen sexual and/or contraceptive behavior. Reviews of these evaluations found that a number of programs that promote abstinence but also incorporate information about contraception, STDs, and preventive health care delayed the initiation of sexual activity among teens and increased the use of contraceptives in sexually experienced adolescents. A recent review reported that for programs in the US, 14 out of 30 delayed the initiation of sex and 18 out of 37 increased condom use (18, 19).

Most of the programs that have been shown to be effective support teenagers in postponing sexual activity; help them develop skills to resist pressures to become sexually active; provide training in decision-making skills related to dating, sexuality,

contraception, abortion, childbearing, and parenthood; and help the adolescent develop alternatives to sexual activity. Through a review of hundreds of sexuality and family life programs, the common characteristics of effective programs have been identified.

## Characteristics of successful sex and family-life education programs

There are 10 characteristics that are key to successful sex and family life education programs (18). Effective programs:

1. Focus clearly on reducing one or more sexual behaviors that lead to unintended pregnancy
2. Maintain age-appropriate and culturally relevant behavioral goals, teaching methods, and materials that coincide with the sexual experience level of the participants
3. Utilize theoretical approaches that have demonstrated effectiveness at reducing other health-related risky behaviors, such as social learning theory, social inoculation theory, and cognitive behavioral theory\*
4. Allow sufficient time for presentation of information and completion of activities
5. Involve the participants to personalize the information being presented
6. Provide basic and scientifically accurate information about the risks of engaging in sexual intercourse without protection, and about ways to avoid participating in unprotected sexual intercourse
7. Address social pressures to engage in sexual activity
8. Model communication, negotiation, and refusal skills
9. Select teachers or peer leaders who are committed to the program and provide training to help them facilitate the program
10. Give and continually reinforce a clear message about abstaining from sexual activity and/or using birth control. (This appears to be one of the most important components of effective sexuality education programs.)

\*The social learning theory teaches that an adolescent's decision to use birth control is determined by an understanding of what must be done to avoid pregnancy, a belief that he or she will be able to use the method and that it will prevent pregnancy, and an anticipation of the benefit from accomplishing the behavior. The social inoculation theory suggests that adolescents can develop a resistance to sexual pressures if provided with the skills and desire to do so. The cognitive behavior theory holds that youth must be taught decision-making and assertive communication skills to manage interpersonal encounters successfully.

Some of these sexuality and family life programs include a parent component. These programs are designed to improve parent-child communication and attempt to delay sexual activity among younger adolescents by encouraging parents to promote sexual abstinence and responsible sexual decision-making. These include programs for parents only, programs for parents and their children together, homework assignments in school sexuality education classes that require children to communicate with their parents, and video programs with written materials that are to be completed at home. One of the primary goals of these programs is to help adults gain the information and skills needed to communicate effectively with young people about reducing sexual risk-taking (25).

Other sexuality and family-life education programs are implemented in the community. These programs, like those in schools, vary in content. Some programs offer pregnancy and contraception information to diverse groups of adolescents; others focus on recognizing the value of abstinence and building responsible sexual decision-making skills. Still other programs offer a combination of services by providing support for young teenagers in abstaining from early intercourse, as well as providing information on contraception and responsible sexual behavior for those who are sexually active. Several studies have shown that community-based programs are difficult to replicate, and must be maintained if they are to continue to be effective (18, 19).

### • Abstinence-only programs

Thus far, only a few studies have been published on abstinence-only programs. Six studies of abstinence-only programs that have been rigorously evaluated have been identified. Of the three studies that measured impact on initiation of sex, none had a significant impact. That is, they neither delayed nor hastened the initiation of sex among the adolescents in the studies. Two of the four programs that measured frequency of sex reported a reduction in the frequency of sex among those who had previously had sex, and one of the four increased the frequency of sex (19). A rigorous evaluation of abstinence only programs funded by the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Planning and Evaluation (ASPE) was just completed by Mathematica Policy Research. It found no evidence that abstinence-only programs increased rates of sexual abstinence. It also found that students in the abstinence-only programs had a similar number of sexual partners as their peers not in the programs, as well as a similar age of first sex (26).

Comprehensive approaches, like those offered by many sexuality and family life programs, are essential. The American College of Obstetricians and Gynecologists supports the inclusion of comprehensive, medically accurate, age-appropriate sexuality education for kindergarten through 12th grade as an integral part of health education in schools and communities. Sexuality education should encourage young people to delay becoming sexually active and, if sexually active, to use contraception and barrier protection to prevent unintended pregnancy and STDs (27).

## Programs That Provide Family Planning Services

Another approach to teen pregnancy prevention focuses on increasing access to and use of family planning services, including condoms. Condoms have been proven to protect against pregnancy, HIV transmission, and transmission of gonorrhea, chlamydia, and trichomonas; they also provide the best available protection against other STDs (28). Studies of the family planning services that have increased condom or other contraceptive use among adolescents they serve, including condom-availability programs in schools, school-based health centers, and family planning programs with clinic protocols adjusted to teenagers have found that they shared common characteristics. The programs focused primarily on reproductive health and provided adolescents with a combination of educational materials, the opportunity for one-on-one counseling or discussions, a clear message about abstinence and condom/contraceptive use, and actual condoms or other contraceptives (18).

Many programs that make condoms available are designed to prevent STDs, including HIV and AIDS, although they also could reduce the number of adolescent pregnancies. Studies consistently demonstrate, however, that provision of condoms or other contraceptives in condom-availability programs, school-based health clinics (SBHCs), and family planning clinics do not increase sexual activity (18). Therefore, the potential for a positive effect of condom-availability programs on the incidence of adolescent pregnancy is promising.

- **Condom-availability programs**

In 1991, school districts in New York City and Los Angeles began implementing condom-availability programs, which increased public awareness of these programs and resulted in widespread implementation. In these programs, condoms were distributed to both males and females, thereby encouraging both sexes to take responsibility for having a condom. One recent study in the state of Massachusetts found that sexually experienced teenagers who attended schools where condoms were distributed were more likely to use condoms compared to sexually experienced students whose schools did not provide condoms (29).

Opponents of condom-availability programs question the necessity of such programs because sexually active teenagers can purchase condoms elsewhere. Although condoms are widely available without a prescription, this does not necessarily translate into ready access for adolescents. Teenagers face many obstacles to obtaining and using condoms and other forms of contraception including concerns about confidentiality, cost, access, transportation, embarrassment, objection by a partner, and the misperception that the risks of pregnancy and infection are low (30, 31).

### Condom-Availability Programs

Numerous SBHC programs that provide condoms have been implemented in recent years. In addition, many schools without SBHCs have implemented school- or district-wide condom availability programs. There also are many districts that implement condom-availability programs in selected schools. For information on the specific locations providing condom-availability programs, contact John Schlitt, Executive Director, the National Assembly on School-Based Health Care (NASBHC), 666 11th Street, NW, Suite 735, Washington, DC 20001; telephone 888-286-8727/(202) 638-5872; [www.nasbhc.org](http://www.nasbhc.org).

One survey addressing teenagers access to condoms at drugstores and convenience stores in Washington, DC reported that only 33% of the stores clearly indicated where condoms were shelved. Condoms were kept behind a counter in 83% of all convenience stores and 15% of drugstores, necessitating assistance from a store clerk. Furthermore, adolescent females asking for help in finding and purchasing condoms reported encountering "resistance or condemnation" 27% of the time (32).

- **School-based health centers**

The number of SBHCs has increased in recent years. According to the 2002 State Survey of School-Based Health Center

Initiatives, there were 1,498 SBHCs across the country – an increase of nine percent over the previous two years (33). Located in a clinic on or near the school grounds, SBHCs provide comprehensive physical and mental health services to children in need of care at locations accessible to children and their families. School-Based Health Centers serving middle schools and high schools provide reproductive and other health services to adolescents. In addition to a broad range of primary health care, these centers typically offer pregnancy testing, gynecologic examinations, STD testing and treatment, and HIV counseling.

However, the majority of SBHCs do not provide contraceptive services. According to a national survey of centers conducted in 1998-1999, only about one-quarter of centers offered contraception on-site, and 77% prohibited the provision of contraceptive methods to teens. Centers in rural centers and those serving younger students are significantly less likely to provide reproductive health services (34).

### School-Based Health Centers

For more information on SBHCs, contact the Center for Health and Health Care in Schools (CHHCS), George Washington University, Department of Public Health and Health Services, 1350 Connecticut Avenue, NW, Suite 505, Washington, DC 20036; telephone (202) 466-3396; [www.healthinschools.org](http://www.healthinschools.org). The Center for Health and Health Care in Schools is a nonpartisan policy and program resource center supported by the Robert Wood Johnson Foundation and U.S. Department of Health and Human Services. It is designed to improve health services through SBHCs and outcomes for children and adolescents by developing organizational and financial options for school-based health programs and linking school and community-based health programs.

- **Family Planning Clinics**

Publicly supported family planning clinics are critical to teen pregnancy prevention. These clinics served nearly two million women under the age of 20 in 2001 (35), making them the primary sites where teenagers obtain medically prescribed contraception (36). Many of these publicly funded clinics are operated by local health departments, particularly those in rural areas. Family planning services also may be offered at Planned Parenthood sites, community health centers, obstetrician–gynecologist offices, hospital outpatient departments, and other community-based agencies. In many of these facilities, efforts are underway to enhance the clinical services currently provided to teenagers to improve their access to and use of family-planning services. California is the one state to have provided statewide access to family planning for adolescents and this program, Family PACT, is highlighted in the next section.

### Programs That Seek To Enhance Adolescents' Life Options

The life-options approach is based on the assumption that young people will be motivated to avoid early pregnancy and parenthood if their experiences and opportunities are

broadened, thereby helping teens to see alternative pathways to achieving adult status. Some of these programs are comprehensive and long-term; others are more narrowly focused on providing service learning opportunities.

The comprehensive, long-term programs include some or all of the following elements: 1) life-planning and decision-making; 2) role-modeling and mentoring; and 3) youth employment programs. Life-planning and decision-making programs rely on a curriculum that enables adolescents to prevent pregnancy and plan for alternatives to early parenthood. Role-modeling and mentoring programs provide disadvantaged youth with positive role models and social support for practicing desirable social behaviors. Youth employment programs offer participants actual paid or unpaid work experience along with academic or vocational training, social support, or interventions to improve their life-planning skills.

Another approach aims to broaden the life experiences and worldview of adolescents by engaging them in intensive service learning programs. The philosophy is that by providing teens with opportunities to contribute to their communities – and then process the experience with peers under adult supervision – greater maturity and responsibility in decision-making results.

Evaluations of these programs provide strong evidence that they reduce pregnancy rates. The CAS-Carrera program described in the next section had very impressive results for girls, although not so for boys. And one service learning program, the Teen Outreach Program, showed strong results for both adolescent males and females. It should be noted that evaluations of youth employment programs have not shown promising results to date. Because there have been relatively few rigorous evaluations of life options' programs, more investment in research is needed in this area (18).

## Models for Teen Pregnancy Prevention Programs

The number of adolescent pregnancy prevention programs that have been rigorously evaluated has increased in recent years. The program models in this report are among them. In general, the programs described here were selected according to the following criteria: 1) the program evaluation employed an experimental or quasi-experimental design<sup>b</sup> and 2) the program showed strong evidence of effectiveness in reducing sexual activity and/or in increasing contraceptive use among adolescents. Descriptions of three types of programs follow: programs that provide sexuality and family-life education, programs developed to improve adolescents' use of and access to family planning services, and programs that are designed to enhance adolescents' life options and expand their worldview.

### Sexuality and Family-Life Education Programs

This section describes six sexuality and family life programs, four of which were implemented in schools and two of which were implemented in community settings. All of these programs were evaluated using an experimental or quasi-experimental design and in several cases, subsequent replications and evaluations have been conducted.

#### • Postponing Sexual Involvement

The *Postponing Sexual Involvement* (PSI) program was developed by the Emory University School of Medicine and Grady Memorial Hospital Teen Services Program in Atlanta, Georgia for implementation in schools. This outreach educational program for eighth graders consisted of two components: 1) human sexuality and 2) skill-building. The human sexuality component was already established in the school to provide youth with basic factual information and decision-making skills related to reproductive health, including

knowledge about contraceptives and how to use them effectively. It was presented during five class periods by nurses and counselors from the Emory/Grady Teen Services Program.

The skill-building component of the program was presented to eighth grade students during five additional classes. It was designed to enable youth to deal with social and peer pressures that can lead to early sexual involvement by focusing on these pressures and discussing ways to resist them. Emphasis was placed on the reasons young people decide to have sex and how they might learn to choose not to have sex, rather than on the consequences of such behavior.

The five additional sessions were led by two students from the 11th or 12th grade, usually one male and one female. The leaders were recruited, trained, and supervised on site in each classroom by the Emory/Grady Teen Services Program staff. Through activities in which young teenagers had frequent interactions with older teenagers, these sessions were designed to help young people develop and practice skills that would enable them to carry out the desired goal of postponing sexual intercourse.

The program evaluation focused on determining whether adding the PSI program to the existing curriculum reduced the rate of sexual activity among teenagers. The results of the evaluation indicated that students who were not sexually active before they participated in the program were significantly more likely to continue to postpone sexual involvement. By the end of the ninth grade, one-third fewer students who were in the program had become sexually active compared to those students who were not in the program. In terms of sexual activity, a difference between participants and non-participants persisted through 12th grade. The study also found that students who became sexually active after participating in the program were more likely to use contraceptives than were those not in the program.

Overall, pregnancies among females who were not sexually active at the time of enrollment had been reduced by one-third at the end of ninth grade. At the end of 12th grade, there was a 13% difference in pregnancy rates, but this difference was not statistically significant and, therefore, must be viewed with caution. The program did not affect teenagers who were sexually active before the program. To address this, a new, age-appropriate program, PSI for Preteens, was developed for students 10–12 years of age. This program confronts such issues as becoming a teenager, sexual curiosity, peer pressure, and assertiveness techniques.

The PSI program has been replicated in public school classrooms across the country. In Washington, DC, the PSI program was replicated in combination with the individual and small group education methods of the Self Center, the SBHC in Baltimore, Maryland described later in this report. Six months after the curriculum was implemented, facilitators presented the three classes on reproductive health from the previous year, followed by a series of “booster” activities designed to reinforce the concepts of abstinence and better self-care.

These booster activities consisted of eight “brown bag sessions,” small informal voluntary group discussions, offered during lunch or mid-day free period. These sessions, at least one of which all participants were expected to attend, covered a range of adolescent health topics, including gang violence, drug abuse, personal hygiene, and pregnancy. Facilitators were expected to speak privately at least once with participating students in response to questions. Additional booster sessions included a presentation on STDs by health professionals and a contest on an intervention-related topic.

Two months after the start of the program, females in the program were more likely than those in the control group to report virginity, the ability to refuse sex with a boyfriend, and the intention to avoid sex for the next six months. At the end of the eighth grade, significantly more female participants in the program than the control group reported virginity, birth control use at last intercourse (for nonvirgins), and knowledge of adolescent reproductive health and confidentiality rights. In male participants, however, no changes in virginity, the ability to refuse sex, or sexual intent for six months were observed at any time of the study, although program participants showed significantly increased knowledge of birth control methods than the control group.

*Education Now and Babies Later* was an abstinence-only initiative that replicated only PSI's skill-building component in 17 sites in California. This program served an ethnically diverse group of teens between the ages of 12 and 14 years. Evaluation of this program indicated that there were no significant positive changes in the sexual behavior of participants as compared with a control group. The evaluators thought that the finding may have been the result of the short length of the program and the short number of skill-building sessions. This finding also suggests that the human sexuality component of PSI addressing contraceptive use may be essential for the program to be successful.

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#### • **Reducing the Risk**<sup>c,d,e</sup>

*Reducing the Risk* is a high-school-level sexuality education curriculum designed to prepare teenagers to manage situations that can lead to unwanted pregnancy. Lessons discuss abstinence and contraception in ways that are relevant to teenagers' lives. The curriculum is based on three interrelated theoretical approaches: 1) social learning theory, 2) social inoculation theory, and 3) cognitive behavior theory.

By applying these theories, a 15-unit curriculum was developed and implemented in 13 California high schools as part of health education courses for eighth and ninth graders. The curriculum enabled teachers and students to model socially desirable behaviors and discuss the various social pressures that prevent these behaviors from occurring. Ways to resist pressures to have sex were developed and practiced through role-playing. This curriculum also provided instruction and practice in using the social skills necessary to apply knowledge about preventing pregnancy. For example, students were given the opportunity to practice obtaining birth control information from stores and clinics. Other activities were designed to encourage teenagers to discuss sexuality issues with their parents.

The *Reducing the Risk* curriculum was evaluated by comparing the program participants with a control group. The students assigned to the curriculum and control groups were surveyed before curriculum implementation, immediately afterward, six months later, and 18 months later. The results of the evaluation indicated that the program significantly increased the participants' knowledge and parent-child communication about abstinence and contraception. The curriculum appears to have significantly reduced unprotected intercourse among all lower-risk youth and all students who had not initiated intercourse before their exposure to the curriculum, either by delaying the onset of intercourse or by increasing the use of contraceptives. However, it had no significant effect on high-risk students.

The same curriculum was replicated in five school districts in Arkansas and many effects were consistent with the effects of the program in California (although it should be noted that the evaluation design was weak and the attrition rate was high.) The curriculum participants were significantly less likely to initiate sexual intercourse, more likely to use condoms and other contraceptives if they were sexually inexperienced at program onset but became sexually active during the study, and more likely to communicate with parents about birth control and protection from STDs/HIV than the control group. A third research team in Kentucky evaluated *Reducing the Risk* and found in both studies that the program delayed the initiation of sex. It is interesting to note that in one of the two Kentucky sites, the curriculum was shortened by four sessions (from 16 sessions to 12), and still found to have an impact.

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- **Safer Choices**<sup>c,d,e</sup>

*Safer Choices* is a school-based HIV/STD and pregnancy prevention program for high-school youth. It is based on social cognitive theory, social influence theory, and models of school change. It addresses the influence of school and home environment on student behavior, with an emphasis on addressing individual and peer risk factors in the school environment. The program consists of five primary components: 1) school organization, 2) curriculum and staff development, 3) peer resources and school environment, 4) parent education, and 5) school–community linkages.

An evaluation was conducted of the implementation of *Safer Choices* in the early 1990s. During the 1993–1994 and 1994–1995 school years, 10 schools in urban and suburban areas in northern California and southeast Texas implemented this program to ninth grade students from various racial and socioeconomic backgrounds. The same students participated as 10th graders in the second year.

In each setting, a School Health Promotion Council was established -- involving teachers, students, parents, administrators, and community representatives -- to plan and conduct program activities. Students participated in 10 interactive classes, taught by trained classroom teachers, on knowledge, norms, and skills to avoid sex or to use condoms. Also, a *Safer Choices* peer team or club was established at every school to plan and host school-wide activities designed to alter the normative culture of school and to run a resource area on campus. To educate parents, newsletters were published to provide information on HIV/AIDS/STDs and pregnancy, as well as tips on talking with teenagers about these issues. Parents also participated in student–parent homework on HIV/AIDS/STDs and pregnancy. In order to enhance school–community linkages, some homework assignments required students to gather information about local resources and support services outside of school.

At the first follow-up (approximately seven months after the first year implementation began), program participants were compared with students in 10 comparable schools in the same areas who received a standard, knowledge-based HIV prevention curriculum. The findings suggested that the program had many significant effects on participants' sexuality-related psychosocial factors and behaviors. *Safer Choices* participants' knowledge was enhanced more than the control group in terms of ability to use condoms effectively, normative beliefs and attitudes regarding condom use, and communication with parents regarding HIV/STD/ pregnancy prevention. Participants also reported significantly fewer barriers to condom use and higher levels of perceived risk of acquiring HIV/STDs than the control group. Moreover, program participants reduced the frequency of intercourse without a condom in the three months before the follow-up survey, and increased the use of condoms as well as other effective contraceptives at last intercourse.

At the 31-month follow-up, program participants were 37% less likely than students in the control groups to report having intercourse without a condom and students also reported having sexual intercourse without a condom with

fewer partners. The evaluation found that, overall, there were no differences in sexual initiation between adolescents who participated in *Safer Choices* and those in the control group at any of the follow-ups. However, one striking finding was that Latino teens who participated in the program were 43% less likely to initiate sexual intercourse than Latino teens in the control group at the 31-month follow-up.

A unique evaluation assessed the cost effectiveness and cost benefits of *Safer Choices*. The evaluation was conducted in four steps: (1) estimation of intervention costs; (2) adaptation of a model to translate increasing condom use into cases of HIV and other STD cases averted and development of a model to translate increases in contraceptive use into cases of pregnancy averted; (3) translation of cases averted into medical and social costs averted; and (4) calculation of the net benefit of the program. The evaluators concluded that for every dollar invested in the program, \$2.65 in total medical and social costs were saved.

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- **Becoming a Responsible Teen**<sup>c,d</sup>

*Becoming a Responsible Teen (Project B.A.R.T)* was a school-based program implemented in Jackson, Mississippi in collaboration with a comprehensive health center that serves predominantly low-income minority patients. It was designed to affect cognitive and emotional meanings attached to risky behavior, to model behavioral competencies, to provide practice and feedback, and to reinforce new skills.

Program participants were selected from a pool of African-American male and female adolescents between the ages of 14–18 years from low-income households, with no current symptoms of HIV infection or AIDS. They included public school students and school dropouts. The school district where the program was implemented did not include HIV education in the curriculum. The participants attended eight 90–120-minute weekly sexuality education sessions plus a behavioral skills training intervention at a conference room at the health center.

The sessions were conducted for groups of up to 15 teenagers. Sessions were led by two trained project staff, and consisted of six components: 1) HIV/AIDS education, 2) sexual decisions and values, 3) technical competency skills (condom use demonstration and practice, followed by a group discussion regarding the reasons teenagers do not use condoms), 4) social competency skills (communication and assertiveness skills to avoid engaging in unprotected sex), 5) cognitive competency skills (risk recognition and accurate perception of vulnerability, followed by training on behavioral self-management and problem-solving strategies), and 6) social support and empowerment (strengthening of personal beliefs in one's ability to do things effectively, such as using condoms effectively, based on peer coping models).

The program was evaluated with an experimental design that compared participants with adolescents from the same background who received only a single two-hour educational

program on HIV/AIDS, the same curriculum that the *Project B.A.R.T.* participants received on the first day with the same classroom protocol. The evaluation demonstrated that both male and female adolescent participants of *Project B.A.R.T.* obtained greater benefits than non-participants. During the role-play simulations after the intervention, the *Project B.A.R.T.* participants were more skillful than those in the education-only group at handling coercive situations and providing information to peers.

At the 6- and 12-month follow-ups, those in the *Project B.A.R.T.* group reported significantly less unprotected sexual intercourse than those in the education-only group, and they were continuing significantly less risky behavior at the 12-month follow-up. The education-only group resumed or increased risky behaviors. Moreover, among those who were abstinent before the program, 31% in the education-only group initiated sexual activity one year later, while only 12% of the *Project B.A.R.T.* adolescents did. Among those who were sexually active at the beginning of the program, the percentage of sexually active youth in the *Project B.A.R.T.* group decreased from 36% to 27% after one year. There was no such decrease in the education-only group.

There have been two replications of the BART program with experimental designs. The BART program was implemented in a drug rehabilitation center. Evaluators found that over 13 months, the program increased abstinence, reduced the number of sexual partners, increased condom use, and reduced unprotected sex. In a second replication, a much shortened version of the program was implemented in a state juvenile reformatory. Evaluators found that the program did not significantly change behavior.

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#### • **Making a Difference**<sup>c</sup>

*Making a Difference* is a community-based program aimed at reducing HIV risk among inner-city African-American adolescents by advocating abstinence and safer sex. The program is based on cognitive-behavioral theories, and its activities incorporate the theme, "Be proud! Be responsible!" This theme was used successfully in the past in studies with inner-city African-American adolescents, and encourages participants to be proud of themselves and their communities, to behave responsibly, and to consider their goals for the future and how unhealthy behavior might affect the attainment of these goals.

Students in sixth and seventh grades from three middle schools in low-income, African-American communities in Philadelphia participated in eight one-hour intervention classes over two Saturdays. They were assigned to either an abstinence-HIV intervention or a safer-sex-HIV intervention. The abstinence-HIV intervention acknowledged that condoms can reduce the risks associated with sexual activity but emphasized abstinence to eliminate the risk of pregnancy and STDs. The safer-sex HIV intervention indicated that abstinence is the best choice but emphasized the importance of using condoms to reduce the risk of pregnancy and STDs if they were to have sex.

The program was highly structured, and implemented by trained adult or peer facilitators who used manuals to guide their discussions. Both interventions involved group discussions, videos, games, brainstorming, experiential exercises, and skill-building activities—and they were designed to increase HIV/STD knowledge, enhance the belief that abstinence or using condoms could prevent pregnancy and STDs, and increase skills to use condoms or to resist the pressure to have sexual intercourse.

To assess the impact of the program, participants in each intervention group were compared with the control group who received a health promotion intervention. The health promotion intervention was implemented in the same structure, but focused not on HIV or sexual behavior but on behaviors associated with the seven leading causes of premature death among African Americans (e.g., cardiovascular disease, certain cancers). At the three-month follow-up, participants in the abstinence HIV intervention were significantly less likely to report having sexual intercourse than the control group. Safer-sex HIV intervention participants were significantly more likely to report consistent condom use than the control group or the abstinence group.

Among those who were sexually experienced before the program, the safer-sex HIV intervention group reported less sexual intercourse in the previous three months than the control group or the abstinence group. Although the effect of the abstinence intervention tended to diminish with longer-term follow-ups, the safer-sex intervention's effects on condom use and frequency of sexual intercourse generally were sustained 6–12 months after the intervention. An experimental evaluation of *Making a Difference* is being undertaken with Latino teens in Philadelphia.

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#### • **Focus on Kids**<sup>c,d,e</sup>

*Focus on Kids* is one of the few community-based programs that has been rigorously evaluated with an experimental design and shown to have positive, albeit short-term, effects on teen sexual behavior. The goal of the program was to reduce HIV risk among African American girls and boys aged 9 to 15 by increasing their understanding of how HIV is transmitted and teaching them about prevention strategies, such as abstinence and condom use.

In the first study, the program was implemented in 1993 in nine recreation centers located in three Baltimore public housing developments. Participants met once a week over a period of eight weeks. At each session, small groups of youth listened to lectures, watched videos, and/or participated in discussions and role-playing. With the goal of encouraging participants to adopt behaviors that would reduce their risk of contracting HIV, the primary topics for these sessions were abstinence and contraceptive use.

The program was evaluated in a study that used an experimental, random-assignment design evaluation. The evaluation found that six months after completion, youth who participated in *Focus on Kids* perceived greater risks of not using condoms and were more likely to report intention to use condoms compared to adolescents in the control group. Also, compared to the control group, program participants were more likely to report using condoms the last time they had sex (85% versus 61%). By the 12-month evaluation, all significant differences between the two groups had disappeared.

*Focus on Kids* was evaluated in a second randomized trial where it was adapted for a more conservative rural setting and some of the condom activities were removed in evaluation sites. The replication study found that the program did not make a significant impact on condom use, which suggests that inclusion of the condom activities may be critical to the success of this approach.

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## Family-Planning Programs

This section begins with a description of the California Family PACT Program, the only state-wide, comprehensive initiative providing family planning services to low-income residents, including to teens. Although this program was not evaluated using an experimental or quasi-experimental design, an in-depth evaluation found promising results. Then, four different types of programs providing access to condoms and/or other forms of contraception that have been rigorously evaluated are highlighted: two condom availability programs in high schools, two teen health center models, an adolescent protocol for family planning services, and a new group-based program for African-American girls implemented in a clinic setting.

### • California Family PACT program

In 1997, California instituted a far-reaching family planning initiative called the *Family Planning, Access, Care, and Treatment (PACT) Program*. The goals of *Family PACT* were to 1) provide coverage for family planning, health education, counseling and services for low-income women and men (including teens) and 2) reduce unintended pregnancy by reducing barriers to family planning. Although focused on a broader population, approximately 25% of program participants were age 19 years or younger. Sexually active teens received enhanced education and counseling services, as well as additional services related to STDs through *Family PACT*.

Free family planning and reproductive health services were provided through the *Family PACT* program to low-income adolescents and adults. Residents were eligible if they were at risk of pregnancy or causing a pregnancy, had a gross income at or below 200% of the FPL, and had no other source of health care coverage for family planning services. Because teen eligibility was based on personal income rather than parent's income, the vast majority of teens were eligible. Parental consent was not required and teens were assured of patient confidentiality.

Adolescents received a broad array of free services from *Family PACT* including pregnancy testing, contraceptive

methods and supplies, emergency contraception, education and counseling, periodic physical examinations, STD testing and treatment, HIV screening, and referrals for services not covered by the program. Over the first five years of the program, adolescent participation increased by 52% from 198,970 to 303,142 teens served. Researchers estimated that *Family PACT* averted an estimated 43,610 adolescent pregnancies in 2002 alone, which could have resulted in 21,370 births, 15,700 abortions, 6,110 miscarriages, and 430 ectopic pregnancies.

An extensive evaluation was undertaken by researchers at the Center for Reproductive Health Research and Policy Studies at the University of California, San Francisco that measured access to services, developed a profile of users, identified service utilization patterns, and assessed the sensitivity of the health care system to the needs of adolescents. Data sources included baseline data on California's previously established family planning services, enrollment and claims data, client exit interviews, and on-site observations.

The researchers concluded that "by linking eligibility determination to the delivery of services, removing cost barriers, increasing the number and types of providers, offering publicly funded services, and ensuring confidentiality, a greater number of adolescents obtained needed reproductive health care, thus ensuring an opportunity to reduce unintended pregnancies and sexually transmitted diseases." It is important to note that *Family PACT* was implemented during a period in California when birth rates were declining more rapidly than birth rates in nearly all other states. Although many factors probably contributed to this rapid decline, it is likely that *Family PACT* was an important factor.

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### • New York Condom-Availability Program in High Schools

Starting in November 1991, every public high school in New York City was required to implement a condom-availability program as a part of the school district's HIV/AIDS education program. Although the programs varied across schools, all schools were required to provide condoms free of charge to students upon request; have at least two specially trained staff members, one male and one female, to distribute the condoms; teach six lessons on HIV/AIDS in each grade; provide an HIV/AIDS information session for parents; and establish an HIV/AIDS education team composed of the principal, the assistant principal, teachers, parents, students, and health resource staff. Schools were required to establish a private area with condoms and health resources on HIV/AIDS and other STDs that was staffed during at least 10 class periods each week at a variety of times during the school day. It was also required that a schedule be posted that was accessible and understandable to students regardless of language spoken.

It was not a requirement that students receive counseling when they requested condoms, but written instructions typically were provided with the condoms. Some schools had baskets of condoms in common areas, whereas others

required students to go to a specified area or staff member. A few schools limited the number of condoms that could be taken at each visit. Most, however, had no limit.

When the program was first implemented, parental consent was not required. However, in 1993 a passive parental consent regulation was passed. Parents were mailed consent forms, which they were asked to return if they did not want their child to be able to obtain condoms at school. Fewer than two percent of parents returned the form. Most parents in New York City believed that students should be able to obtain condoms at school, provided that parents were given the right to determine whether their children could receive them. Two-thirds of parents reported that they would grant permission for their child to obtain condoms, if necessary.

A three-year evaluation of this program was completed comparing students in New York City with those in Chicago schools without condom-availability programs. The students in the New York schools were no more likely than those in the Chicago schools to have initiated sexual activity, but they were more likely to report use of a condom at most recent intercourse. Other results indicated that sexually active males were significantly more likely than sexually active females to have used the program. Of the males and females who used the program, males were more likely to have used it more than once. They also were significantly more likely than females to report condom use at most recent sexual intercourse and during the past six months.

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#### • **Seattle Condom Availability Program in High Schools**

An evaluation was undertaken of the effects of making condoms available to teens aged 14 to 18 years in 10 public schools in Seattle, Washington. In five high schools with health centers, condoms were made available in baskets in the health centers. Free information on abstinence, HIV prevention, and condoms was also provided in the health centers. Condoms were made available in vending machines in the high schools that did not have health centers.

The quasi-experimental study design had a very large sample (over 40,000 students). The evaluators collected questionnaire data in the 10 Seattle schools (both before condoms were made available and then again two years later). To compare the Seattle schools, random samples were collected of high schools throughout the country before the program was implemented and two years later. This evaluation found that students obtained large numbers of condoms from the schools, especially in the case of those schools that made condoms available in clinics. The evaluation found that there was no increase in sexual activity in either school.

However, there also was no increase in condom use in either type of school. In the schools without clinics that used vending machines to provide condoms, there were no significant changes in condom use (or in use of oral contraceptives). Somewhat surprisingly, there was a significant decrease in condom use and a significant increase in oral contraceptive use in the schools with clinics and baskets of condoms. The evaluators suggested that the clinics may have been encouraging oral contraceptive use in addition to providing condoms.

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#### • **Teen Health Center Program: Self Center<sup>e</sup>**

The *Self Center* was a clinic located adjacent to a junior and a senior high school in a low-income neighborhood in Baltimore, Maryland. It was established in 1981 as a school-linked pregnancy prevention demonstration project by the School of Medicine at Johns Hopkins University. The program was implemented for three years. The research ended in 1984, and the clinical services ended in 1985. Teams consisting of a social worker and a certified nurse–midwife or pediatric nurse practitioner were assigned to each program school.

The services provided through this program were divided into six components, with three taking place in the school and three in the clinic. School activities included classroom presentations, small group discussions, and individual counseling. Clinic activities included group education, individual counseling, and medical services.

Classroom presentations occurred at least once a semester. At least two discussions per year were mandated, but often more would take place. The first presentation informed students of the services provided by the program. Films were shown to encourage discussion about values, decision-making, and reproductive health. During the same semester or the following semester, a second classroom discussion took place that focused on sexual activity, pregnancy, abstinence, contraceptives, and STDs. Spontaneous group discussions often occurred in the health suites, where relevant books, pamphlets, and games were available to the students. The social worker handled most of these discussions and also was available for one-on-one counseling at the school. When the social worker was engaged in a session, a peer resource team was used as a backup. This group of students had received special training to function as outreach workers and assistants to the staff. They were available to distribute material and manage the equipment.

During the afternoon hours, the team members were in the *Self Center* clinic, which opened at 1:30 pm and closed between 5:00 and 6:00 pm. The waiting room was an attractive, bright, and cheerful place where students could come with or without appointments for discussions, educational films, and games. The *Self Center* also provided a range of reproductive health care services, including contraceptive counseling, pregnancy testing, and provision of contraceptives. To provide these services throughout the entire year, the clinic remained open during the summer. Contraceptives were provided to female students only after a medical examination and in consultation with the social worker. A consultation with the social worker was required for male students to receive condoms. Male students also could receive medical care.

An extensive evaluation compared *Self Center* students with a sample of students from similar urban Baltimore schools (the control schools) over the three-year implementation period. This evaluation was designed to assess changes in knowledge, attitudes, and behaviors of the students and was based primarily on data from self-administered questionnaires. Students between the ninth and 12th grades were asked 10 questions to determine their knowledge of the correct use of

specific contraceptive methods and pregnancy risks. Scores increased significantly overall for both males and females in the program schools during the three-year period compared with students in the control schools during the same period.

The evaluation compared behavioral changes in students with access to the *Self Center* with students in the control schools. After three years of exposure to the program, approximately two-thirds fewer girls in *Self Center* schools had become sexually active by the age of 14 years compared with before the program began. Also, at every grade level, the proportion of sexually active teenagers attending a clinic, not necessarily the *Self Center*, increased substantially. There was no such consistent change in the control schools. The *Self Center* program also seemed to target teenaged boys successfully. By the end of the three years, junior-high-school boys began to attend the clinic in percentages as great or greater than junior-high-school girls.

In the *Self-Center* schools, there was a steep increase in the number of students attending clinics before first intercourse and a decrease in the frequency of intercourse. Also, once they had been exposed to the program for two or more years, less than 20% of sexually active girls were not protected by a contraceptive method at their most recent intercourse. In the control group, this percentage was 44–49%. The increase in contraceptive use, combined with the decrease in frequency of sexual intercourse, had an impact on pregnancy rates. The control and program schools had similar pregnancy rates at the outset of this program, but after 28 months there was a differential of almost 90%. In the control schools, the pregnancy rate had increased by almost 58%; in the program schools, it decreased by 30%. Additionally, the abortion and childbearing rates decreased in the program schools.

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#### • School-Based Health Centers in Denver

An evaluation was conducted of the impact of school-based health centers on fertility among black female adolescents in Denver, Colorado during the 1990s. From 1991 to 1997, the black adolescent fertility rate declined by 26% nationwide while Colorado's rate declined by 46%, the largest of any state during the period. Driving this decline was the downward trend in Denver rates, which fell by 50% between 1991 and 1997, substantially greater than the 36% drop in the rest of the state.

Denver provided an excellent site for testing the impact of SBHCs. Beginning in 1989, Denver schools began establishing SBHCs. Three of Denver's ten high schools hosted SBHCs continuously during the 1990s and four Denver high schools did not have centers during that decade. School-Based Health Center services included: health maintenance examinations, with health screening, psychosocial histories, and counseling for behavioral risk reduction; immunizations; diagnosis and treatment of acute illnesses and injuries; acute management for chronic conditions; pregnancy testing, abstinence and birth control counseling; gynecologic examinations; diagnosis and treatment of STDs; and mental health and substance abuse services. No fees were charged for services.

None of the SBHCs in Denver provided contraceptives or

contraceptive prescriptions, in compliance with an agreement with the Denver School Board. However, center providers referred students who needed contraceptive supplies to the city's neighborhood health centers, where further examinations were not required, visits were confidential, and the adolescent's income was used to determine fees.

For the school years 1990-1991 through 1996-1997, researchers aggregated the fertility rates for black female students who attended the three high schools with SBHCs and compared them with the fertility rates for black female students who attended high schools without SBHCs. Fertility rates declined for both types of areas over the study period, but the rate of decline in the areas with SBHCs was significantly greater (77% vs. 56%).

The researchers postulate that the decline in fertility rates in schools with SBHCs was the result of program strategies to increase access to health care; population-based health promotion and education; aggressive identification, intervention, and follow-up with students with high-risk behaviors; and proactive use of formal referral links. They also concluded that SBHCs with limited reproductive health services may have an impact on adolescent births.

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#### • Adolescent Protocol for Family Planning Services

The Family Health Council of Central Pennsylvania developed and implemented protocols for the provision of family planning services in three family planning clinics serving adolescents. Before the implementation, all staff members were trained over a two-day period on the various aspects of adolescent psychosocial development and ways to administer the protocols. One staff member from each clinic was given additional training to serve as an adolescent counselor.

Research has shown that adolescents benefit from protocols with more supervision and guidance than older patients and are more anxious about medical examinations. As a result, five minutes were added to the initial telephone contact, and the initial visit was divided into two separate visits, which were usually no more than two weeks apart. This format appeared to be acceptable to patients because only 4.3% failed to return for the second visit. During the first visit, education and counseling were provided in one-on-one sessions that were 15–20 minutes longer than before the development of the protocols.

A one-page questionnaire to assess the patient's risk for unintended pregnancy was completed. Visual aids were used to assist with the education process because adolescents find concrete information easier to understand. Recognition and resistance of peer pressure, basic reproduction, methods and effective use of contraception, and STDs were among the topics discussed. The medical examination, which was performed during the second visit, was extended by 10 minutes.

Every effort was made to increase the comfort of the adolescent during the examination. The patient's birth control method of choice was provided at this visit. In addition, adolescents were scheduled for a follow-up visit six weeks

after the initial visits. This allowed staff to monitor the adolescent's use of the chosen contraceptive and address any concerns she might have in order to increase consistent and effective use. Staff encouraged involvement of the patient's partner in the family planning clinic visit after seeing the patient by herself. Parental involvement also was encouraged, but the patient was reassured that she was entitled to confidential services. The protocols included guidelines on ways to involve others without infringing upon the time the patient needed to be alone with staff.

The evaluators compared these protocols with a control group. All study participants were given a quiz to assess the amount of information gained during the education and counseling session. After completing the quiz, staff shared the answers and explained any questions the patient answered incorrectly. Patients also were surveyed about their satisfaction with the clinic. At all follow-up visits, staff documented patient use of contraception, clinic attendance, and unintended pregnancy. Results of the study indicated that patients receiving the new protocol treatment experienced an increase in knowledge about reproductive health issues. Knowledge among those in the control group remained the same.

Patients in the protocol clinics also were more likely to continue use of any contraceptive method than those in the control group as of the 6- and 12-month visits. These differences, however, were statistically significant only at the 6-month visit. For adolescents experiencing a problem with their method, receipt of protocol treatment appeared to have increased the likelihood of continued use. Specifically, 70% of teenagers in the protocol group who experienced problems with their contraceptive method continued to use it, compared with only 40% in the control group. These findings were statistically significant at both the 6- and 12-month visits. In addition, a statistically significant lower rate of pregnancy was seen among the patients in the protocol group.

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### • **SiHLE: HIV Prevention Program for African-American Girls in Clinic Setting**

The *SiHLE* program was developed to prevent STDs and HIV/AIDS among African-American adolescent girls who were sexually experienced. *SiHLE* was originally implemented in the South where prevalence of HIV among adolescents is higher than any other geographic region in the U.S. The *SiHLE* program was atypical because it took place in a clinic but its design was group-based rather than focused on the individual. Evaluators found strong, positive impacts on condom use. This evaluation suggests that program interventions for African American adolescent girls that are tailored to their gender and cultural experiences can enhance HIV prevention behaviors and skills and may reduce teen pregnancy and chlamydia infection as well.

Between September 1995 and August 2002, 522 sexually experienced African-American girls aged 14 to 18 years participated in a randomized controlled trial at four community

health agencies. Eligible participants were African-American girls in this age group who had engaged in vaginal intercourse within the previous six months and who were seeking health services at community health agencies. At baseline, 522 girls completed the baseline survey and were randomized into either the HIV prevention intervention or the general health control group, which emphasized exercise and nutrition.

This intervention was grounded in social cognitive theory as well as the theory of gender and power. The curriculum covered ethnic and gender pride, risk reduction strategies (including correct and consistent condom use), negotiating safer sex, and the links between healthy relationships and practicing safer sex. The primary outcome measure was consistent condom use, defined as condom use during every episode of vaginal intercourse; other outcome measures included sexual behaviors, observed condom application skills, incidence of STD infection, and self-reported pregnancy.

The girls in the *SiHLE* program received four interactive group sessions, four hours each, on consecutive Saturdays at a family medicine clinic. With 10 to 12 participants, each session was implemented by a trained African-American female health educator and two African-American female peer educators. Peer educators modeled skills and created group norms supportive of HIV prevention.

The first session emphasized ethnic and gender pride by discussing the joys and challenges of being an African-American adolescent female, acknowledging the accomplishments of African-American women, and framing artwork created by African-American women artists. The second session enhanced awareness of HIV risk reduction strategies including abstinence, consistent condom use, and limiting the number of sexual partners. The third session used role-play and cognitive rehearsal to build adolescents' confidence in initiating conversations about safer sex, negotiating safer sex, and refusing sexual encounters that were unsafe. Also, peer educators discussed the importance of abstinence as well as correct and consistent condom use and modeled condom skills. The last session focused on the importance of healthy relationships, including an emphasis on how difficult it is to practice safe sex in unhealthy relationships.

At the six-month follow-up, girls who had participated in the intervention reported using condoms more consistently in the previous 30 days compared with their control group counterparts (75.3% in the intervention vs. 58.2 in the control). At the 12-month follow-up, intervention girls reported more consistent condom use both in the previous 30 days (73.3% in the intervention vs. 56.5% in the control) and during the entire 12-month review period. In general, at the 12-month point, girls who had participated in the *SiHLE* program were more likely to have used a condom at last intercourse, and less likely to have had a new sexual partner in the last 30 days. Compared with their control group peers, girls in the intervention had better condom application skills and a higher percentage of condom-protected sex acts. The evaluation found promising results for chlamydia infections and self-reported pregnancy as well.

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## Life Options Programs

Programs that seek to enhance adolescents' life options are designed to provide young people with alternatives to teen pregnancy and childbearing. This section highlights one comprehensive, multi-faceted program that provides adolescents with a broad range of services, opportunities, and educational activities over several years. Also described are two service learning programs aimed at enhancing teens' self-esteem through intensive community service.

### • Adolescent Sexuality and Pregnancy Prevention Program (CAS Carrera)<sup>c</sup>

In 1984, the Children's Aid Society began implementing the Adolescent Sexuality and Pregnancy Prevention Program (CAS-Carrera Program) for male and female adolescents between the ages of 10 and 20 years in New York City. The program has since been replicated at 39 sites across the country. This comprehensive program is designed to increase an adolescent's desire to postpone pregnancy and childbearing through educational services, health care services, and enhancement of life options.

Education was an important component of this program. Family-life and sex education was provided separately to adolescents and parents for two hours a week for 15 weeks. Sexual anatomy, reproduction, HIV/AIDS, sexual orientation, and contraception were among the topics discussed. A considerable amount of time also was spent on gender and family roles; body image; and roles, responsibilities, and values in relationships. In addition, participants' academic skills were assessed periodically, and tutoring and academic assistance was offered accordingly. A homework help program was facilitated two afternoons per week.

This program provided medical and health services for four hours each week. All adolescents were required to have a complete physical examination and all female adolescents received yearly gynecologic examinations. Abstinence was encouraged, but contraceptive counseling and methods were provided to those who were currently sexually active or considering becoming so in the near future. Each adolescent using a contraceptive method was required to meet with a reproductive health counselor weekly to ensure that the method was used effectively and consistently. Mental health and counseling services also were offered three days a week.

To enhance self-esteem and life options, participation in performing arts and sports was encouraged. There were weekly, two-hour workshops in which adolescents and parents explored issues through music, dance, role-play, and dramatization. Issues addressed ranged from conflict resolution to job interviewing. Through sports such as tennis, golf, and swimming, adolescents learned self-discipline and self-control.

A job club and career awareness program was offered to adolescents older than 13 years for two hours each week to encourage investigation of the various careers they might be interested in pursuing. Participants obtained a social security card, learned how to complete working papers and employment applications accurately, opened a bank account, and prepared a resume. They earned a stipend for participation in the program, but were also required to secure

a part-time or full-time job. For those adolescents 12–13 years of age, an entrepreneurial apprenticeship program was established. Through this program, they earned a stipend for working at various community functions, such as basketball games and dances.

An experimental evaluation of this program was conducted by comparing the CAS-Carrera Program participants at 12 sites with those who attended alternative programs (mostly recreational programs) at the three-year follow-up. This study is the only evaluation to date using random assignment, multiple sites, and a large sample size that found a positive impact on sexual and contraceptive behavior and pregnancy and birth rates among girls for three years. Both males and females in the CAS-Carrera groups significantly increased their sexuality knowledge and the behavioral impact of the program was significant for girls. The percentage of females in the CAS-Carrera group who became pregnant was less than half the percentage in the control group (10% vs. 22%). In addition, the female program participants were significantly more likely to have used a condom and hormonal method at last intercourse than the control group (36% vs. 20%).

Among boys, however, the program did not have significant positive behavioral effects. Males in the program were significantly *less likely* than males in the control group to have used a condom and a hormonal method at last intercourse (9% vs. 20%). This unexpected effect on boys may be due to the fact that boys were likely to have been sexually experienced before entering the program at age 13 or 14 years.

One of the attempts to replicate the CAS-Carrera Program in Florida resulted in evaluation results that were not positive. In Florida, the staff tried to implement all of the program activities without the benefit of training by the CAS-Carrera staff. Due to difficulties in recruiting and retaining youth, teens participated less intensively in program activities. Evaluators found that there were no significant positive effects on sexual outcomes and concluded that the reason may have been that the program was implemented without the manuals, training, and oversight of the CAS-Carrera staff.

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### • Reach for Health and Community Youth Service<sup>c,e</sup>

The *Reach for Health and Community Youth Service* (RFH-CYS) program was built upon a community-based service program developed through a collaboration between the Medgar Evers College Department of Nursing, Brooklyn School District 13, and community service agencies in East New York, Brooklyn. It was designed to provide opportunities for urban middle school students to participate in organized community service experiences.

African-American and Latino seventh and eighth graders in a large public urban middle school serving economically disadvantaged minority youth who participated in the program received either the *Reach for Health* classroom curriculum alone or the curriculum enhanced by participation

in the *Community Youth Service* (CYS) program. More than 1,000 students at two urban middle schools were surveyed at baseline and six-month follow-up.

The *Reach for Health* curriculum was delivered to all participating students, and focused on three primary health risks faced by inner-city adolescents: 1) drug and alcohol use, 2) violence, and 3) sexual behaviors that can result in HIV and other STD infections and unintended pregnancy. Teachers who delivered the curriculum received multiple-day training before the program as well as technical assistance throughout implementation. Periodic classroom monitoring also was conducted for quality assurance.

In addition to the classes, students in the *Reach for Health* curriculum plus CYS program spent approximately three hours per week in a community placement, with two placements during the school year in sites such as nursing homes, neighborhood health clinics, child day care centers, and senior citizen centers. In these placements, students performed various tasks associated with social skills and behaviors, including reading to elders; assisting and observing doctors; answering phones; scheduling appointments; filing; and assisting with meals, exercise, recreation, and arts and crafts groups. Back in the classroom, students shared their experiences to reinforce skills in decision-making, communication, information seeking, health advocacy, and other topics.

The program was evaluated by comparing participants in the *Reach for Health* curriculum, the *Reach for Health* curriculum plus CYS, and a control group that attended a comparable school in the area. Written informed consent was collected from both parents and students before students could participate in the surveys. Twenty percent of parents either did not give consent or failed to return forms. Before the program implementation and at the six-month follow-up, students were asked questions regarding four sex behavior indices: 1) lifetime intercourse experience, 2) recent (past three months) intercourse, 3) recent intercourse without condom, and 4) recent intercourse without birth control.

The results showed that students who received the curriculum plus CYS scored significantly lower on sexual behavior indices than those in the control group, after controlling for baseline sexual risk behavior, gender, and grade. A positive effect for curriculum-only students also was present, although weaker than that of curriculum plus CYS students. The greatest effect appeared among eighth graders, who received the most intensive CYS program, including additional orientation lessons to prepare them to work in their placement settings. With regard to sexual initiation, 80% of males in the curriculum-only class had initiated sex, compared with 62% of those who received one year of CYS and 50% of those who received two years of CYS. Among females, the percentages who had initiated sex were 65% of those who received the curriculum only class, 48% of those who had received one year of CYS, and 40% of those who had received two years of CYS.

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#### • **Teen Outreach Program<sup>c</sup>**

The *Teen Outreach Program* (TOP), originated by the Junior League in St Louis, Missouri, is a nine-month school program designed to prevent problems such as early pregnancy and school failure by enhancing normative processes of social development of adolescents. This program is being implemented in 120 middle schools, high schools, and community-based organizations throughout the United States and Canada.

The *Teen Outreach Program* consists of three components: 1) supervised community volunteer service, 2) classroom-based discussions of service experiences, and 3) classroom-based discussion and activities related to key social-developmental tasks of adolescents. Participants perform a minimum of 20 hours of volunteer service, such as working as aides in hospitals and nursing homes, participation at walkathons, and peer tutoring. The classroom discussions, led by a trained facilitator, take place at least once a week throughout the academic year, and engage students in structured discussions, group exercises, role-plays, and presentations with guest speakers. Service-learning discussions help students prepare for their volunteer services, think about their experience, and learn about other students' experiences. Developmentally oriented discussions and activities cover topics such as understanding yourself and your values, life skills, dealing with family stress, human growth and development, and issues related to the social and emotional transitions from adolescence to adulthood. This program does not focus explicitly on high-risk behaviors that result in pregnancy and school failure but rather seeks to enhance participants' competence in decision making, interacting with peers and adults, and recognizing and handling their own emotions.

Between 1991 and 1995, TOP was evaluated using a random-assignment experimental design. (Before this experimental evaluation, TOP was evaluated with a quasi-experimental design in several other locations.) Of the 700 students who participated in the program evaluation, about half were randomly assigned to the experimental group and half were randomly assigned to the control group. At program completion, the evaluators reported that the TOP participants were less likely to experience or cause a pregnancy, be suspended from school, or fail a course than were teens in the control group. Teens in the control group experienced twice the percentage of pregnancies compared to adolescents in the program (9.8% vs. 4.2%).

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## USEFUL WEB SITES

The resources listed below are for information purposes only. Referral to these sources and sites does not imply the endorsement of ACOG. Further, ACOG does not endorse any commercial products that may be advertised or available from these organizations or on these web sites. These lists are not meant to be comprehensive. The exclusion of a source or site does not reflect the quality of that source or site. Please note that sites and URLs are subject to change without notice.

### Advocates for Youth

2000 M Street NW, Suite 750  
Washington, DC 20036  
(202) 419-3420  
<http://www.advocatesforyouth.org>

### American Academy of Family Physicians

P.O. Box 11210  
Shawnee Mission, KS 66207  
(913) 906-6000 • 1-800-274-2237  
<http://www.aafp.org/online/en/home.html>

### American Academy of Pediatrics

141 Northwest Point Blvd.  
Elk Grove Village, IL 60007  
(847) 434-4000  
<http://www.aap.org>

### American College of Obstetricians and Gynecologists

409 12<sup>th</sup> Street SW  
Washington, DC 20024  
(202) 638-5577 • 1-800-673-8444  
<http://www.acog.org>

### American Medical Association

515 N. State Street  
Chicago, IL 60610  
1-800-621-8335  
<http://www.ama-assn.org>

### Annie E. Casey Foundation

701 St. Paul Street  
Baltimore, MD 21202  
(410) 547-6600  
<http://www.aecf.org>  
<http://www.aecf.org/MajorInitiatives/PlainTalk.aspx>

### Association of Reproductive Health Professionals

2401 Pennsylvania Avenue NW, Suite 350  
Washington, DC 20037  
(202) 466-3825  
<http://www.arhp.org>  
<http://www.arhp.org/healthcareproviders/resources/rap/index.cfm?ID=291>

### Aware Foundation

1015 Chestnut Street, Suite 1225  
Philadelphia, PA 19107  
(215) 955-9847  
<http://www.awarefoundation.org>

### Campaign For Our Children

One North Charles Street, Suite 1100  
Baltimore, MD 21201  
(410) 576-9015  
<http://www.cfoc.org/Home>

### Center for Health and Health Care in Schools School of Public Health and Health Services George Washington University Medical Center

2121 K Street NW, Suite 250  
Washington, DC 20037  
(202) 466-3396  
<http://www.healthinschools.org/home.asp>

### Centers for Disease Control and Prevention Division of Adolescent and School Health

1600 Clifton Road  
Atlanta, GA 30333  
(404) 639-3311 • 1-800-311-3435  
<http://www.cdc.gov/HealthyYouth/index.htm>

### Child Trends

4301 Connecticut Avenue NW, Suite 350  
Washington, DC 20008  
(202) 572-6000  
<http://www.childtrends.org>

### ETR Associates

### Resource Center for Adolescent Pregnancy Prevention

4 Carbonero Way  
Scotts Valley, CA 95066  
(831) 438-4060  
<http://www.etr.org/recapp/index.htm>

**EveryBody: Preventing HIV and Other STDs Among Young Teens  
RAD Educational Programs**

PO Box 9059  
Aspen, CO 81612  
(970) 927-5347  
<http://www.preventaids.net>

**Girl Power!**

gpower@health.org  
<http://www.girlpower.gov>

**Go Ask Alice!**

7th floor, Lerner Hall  
2920 Broadway, Mail Code 2608  
New York, NY 10027  
(212) 854 5453  
<http://www.goaskalice.columbia.edu>

**Guttmacher Institute**

120 Wall Street, 21st Floor  
New York NY 10005  
(212) 248-1111 • 1-800-355-0244  
<http://www.guttmacher.org>

**Healthy Teen Network**

509 2<sup>nd</sup> Street NE  
Washington, DC 20002  
(202) 547-8814  
<http://www.healthyteennetwork.org>

**Making the Grade**

1350 Connecticut Avenue, Suite 505  
Washington, DC 20036  
(202) 466-3396  
<http://www.healthinschools.org/about/overview.htm>

**Maternal and Child Health Bureau**

Parklawn Building Room 18-05  
5600 Fishers Lane  
Rockville MD 20857  
<http://www.mchb.hrsa.gov>

**National Assembly on School-Based Health Care**

666 11th Street NW  
Washington, DC 20001  
(202) 638-5872  
<http://www.nasbhc.org>

**National Campaign to Prevent Teen Pregnancy**

1776 Massachusetts Avenue NW, Suite 200  
Washington, DC 20036  
(202) 478-8500  
<http://www.teenpregnancy.org>

**Planned Parenthood Federation of America**

434 West 33rd Street  
New York, NY 10001  
(212) 541-7800  
<http://www.plannedparenthood.org>

**Sex Etc.**

**Answer/Rutgers University**

41 Gordon Road, Suite C  
Piscataway NJ 08854  
(732) 445-7929  
<http://www.sexetc.org>

**Sexuality Information and Education Council of the United States  
(SIECUS)**

130 West 42nd Street, Suite 350  
New York, NY 10036  
(212) 819-9770  
<http://www.siecus.org>

**Society for Adolescent Medicine**

1916 Copper Oaks Circle  
Blue Springs, MO 64015  
(816) 224-8010  
<http://www.adolescenthealth.org>

**Sociometrics Corporation – Replication Kits for Effective Programs**

170 State Street, Suite 260  
Los Altos, CA 94022  
(650) 949-3282  
<http://www.socio.com/program.htm>

**U.S. Department of Health and Human Services**

200 Independence Avenue SW  
Washington, DC 20201  
(202) 619-0257  
<http://www.os.dhhs.gov>

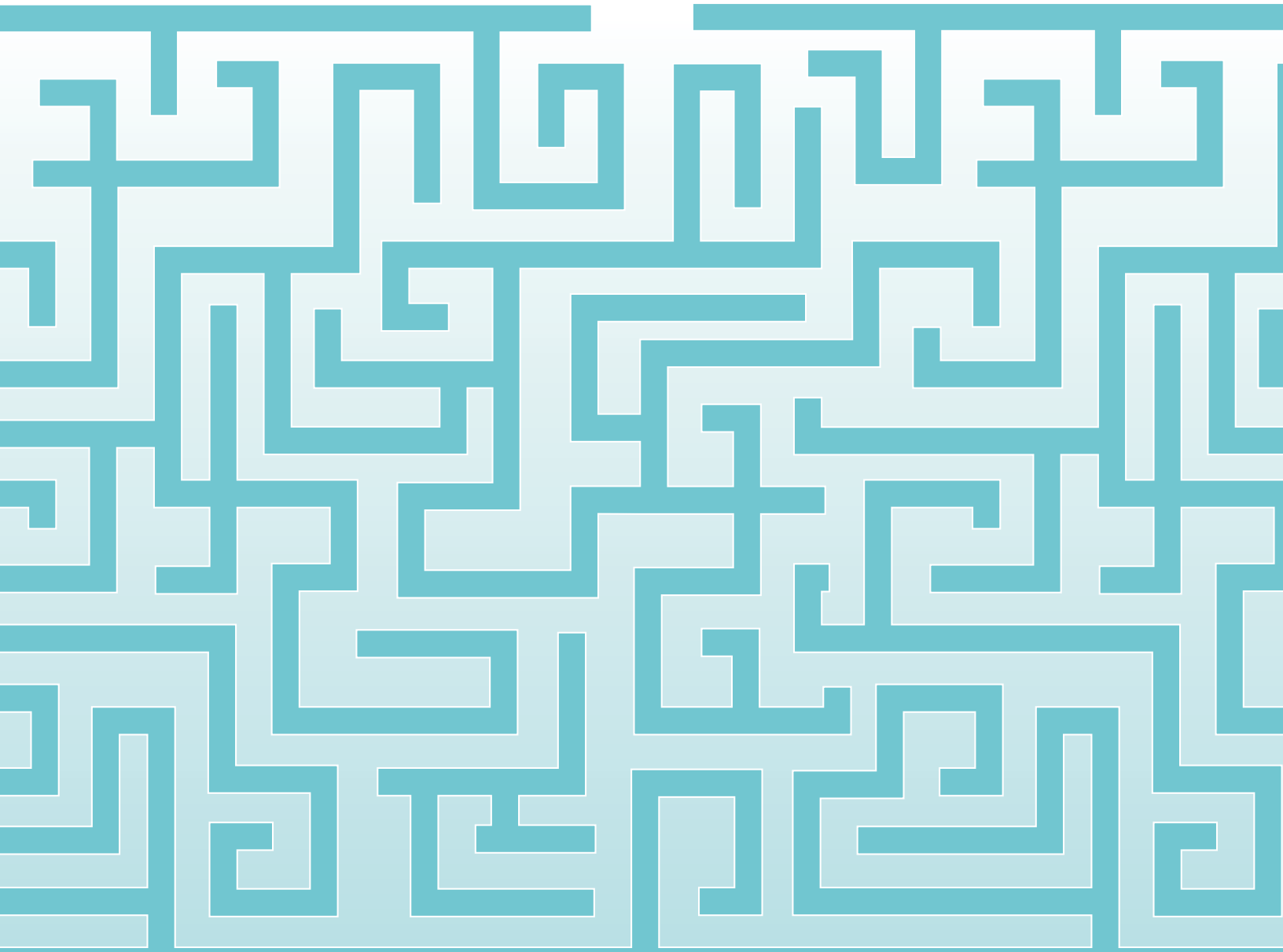
**U.S. Department of Health and Human Services - Office of  
Population Affairs**

1101 Wootton Parkway, Suite 700  
Rockville, MD 20852  
(240) 453-2800  
<http://opa.osophs.dhhs.gov/opainfo.html>

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## Endnotes

- a Contraception includes the pill; Depo-Provera injectable; Lunelle injectable; Norplant implants; condom; IUD; female condom; diaphragm; cervical cap; spermicidal foam, jelly, cream or suppository; sponge; periodic abstinence; withdrawal; and "other methods."
- b Experimental designs are the most rigorous designs; they randomly assign study participants to intervention and control groups and then the two groups are compared. Quasi-experimental designs are less rigorous; rather than randomly assigning study participants to an intervention and control group, they compare the intervention group with a comparison group of similar youth.
- c This program is identified as a program with strong evidence of success in Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy (18). In this report, Kirby evaluated more than 70 programs and studies conducted in the United States and Canada to prevent pregnancy, HIV, STDs, and AIDS among adolescents.
- d This program is available from ETR Associates (telephone 800-321-4407) or the Education Development Center (EDC) (telephone 800-225-4276). ETR Associates and EDC have developed a guide for training teachers to implement the curriculum as well as materials for training those who train teachers. They also conduct workshops.
- e This program is included in the Program Archive on Sexuality, Health and Adolescence (PASHA) compiled by Sociometrics Corporation. PASHA is a database of promising teen pregnancy prevention programs for use in schools, community organizations, and clinics. Information packages containing the tools necessary to implement the programs can be ordered through Sociometrics by calling (800) 846-DISK. Free telephone technical support on implementation and evaluation for one year is included with each order.



The American College of Obstetricians and Gynecologists  
*Women's Health Care Physicians*

409 12th Street, SW • PO Box 96920 • Washington, DC 20090-6920