Teenage pregnancy prevention programs

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Teen pregnancy is a multifaceted problem closely connected to economic, education, social, cultural, and political factors. Adolescents in the United States have the highest pregnancy rates in the Western world. Teen parenthood is associated with discontinued or delayed education, reduced employment opportunities, low wages, unstable marriages, and prolonged welfare dependency. Prevention of teen pregnancy has become an important national agenda. The purpose of this paper is to provide a review of teen pregnancy prevention programs and strategies and to highlight some of the most promising interventions.

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Abbreviation

PASHA Program Archive on Sexuality, Health, and Adolescence

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Despite the recent decline in teen birth rates, unintended pregnancy continues to be a public health and social welfare problem among adolescents in the United States [1,2]. More than 1 million teenagers become pregnant each year resulting in 500,000 live births, of which about 200,000 are to teens ages 17 and younger [3•]. Three fourths of these births are to teens giving birth for the first time, and 72% are to single mothers. About one third of pregnant teens have abortions, and 14% miscarry. The children of teen mothers face heightened health and developmental risks, have disproportionally high infant mortality rates, and low birth weights [3•,4]. In addition, adolescent fathers are not usually prepared to contribute financially to the well-being of their young children. Teen motherhood is associated with discontinued or delayed education, reduced employment opportunities, low wages, unstable marriages, and prolonged welfare dependency [5]. The daughters of adolescent mothers are 83% more likely themselves to become mothers before age 18, and their sons are 2.7 times more likely to land in prison than the children of mothers who delayed childbearing until their early 20s [3•]. Shifts in social norms have occurred so that out-of-wedlock pregnancies are more common and more acceptable, even for older women. General worsening economic conditions for teens, with more of them growing up in poverty, is another contributing factor to teen pregnancy [6•].

Teen pregnancy prevention has reached national prominence during the 1990s. Healthy People 2000 objectives include reducing pregnancy by one third in the next 10 years, increasing the number of teens who delay sexual activity, and increasing contraceptive use (including safer sex practices that reduce sexually transmitted diseases and HIV) by all adolescents [7]. In January 1996, President Clinton and Congress called for a national strategy to prevent out-of-wedlock teen pregnancy and to assure that at least 25% of communities in this country have teen pregnancy prevention programs in place [8]. The National Strategy to Prevent Teen Pregnancy was established to assess and disseminate effective prevention strategies.

The purpose of this paper is to provide a review of teen pregnancy prevention programs and strategies. A theoretical framework is presented. Prevention is divided into primary prevention, which seeks to delay initiation of adolescent sexuality and increase access to contraception, and secondary prevention aimed at encouraging contraception in sexually active adolescents. The impact of the most promising interventions is described, with identifi-

Table 1

A review of some teen pregnancy prevention strategies that have data on evaluations and behavioral impact

Program	Site	Interventions	Behavioral impacts	Comparison strategy
Primary prevention				
Adolescent Compliance in the Use of Oral Contraceptives	Medical clinic	Four-session curriculum, designed to reinforce compliance using peer counselors to educate and support family planning; provide contraceptive education, contraceptive access; 1-, 2-, and 4-month follow-up	Higher level of compliance at 1 and 2 months; at 4 months were still using oral contraception	Experimental and comparison groups
Human Sexuality–Values & Choices	Middle school	15 student sessions, three adult-only involvement, group discussion, lecture, role play, video; stressing abstinence, behavioral skills development, contraceptive education, and sex and STD education	Greater understanding of risk association with early onset of sexual activity than peers	Experimental and comparison groups
New Adolescent Approach Protocol: Tailoring Family Planning Services to Meet the Special Needs of Adolescents	Family planning clinic	Three sessions, adult involvement two visits: one for education and counseling, visual aids, participation of partners, family and friends; provide behavioral skills development, contraceptive education, sex and STD education; 1, 6, and 12-month follow-up	Greater gain in knowledge and in contraceptive use; significantly fewer pregnancies than peers	Experimental and comparison groups
Postponing Sexual Involvement	Middle school	Five sessions, group discussion, lectures, peer counseling, role-play, video; stressing abstinence, behavioral skills development, contraceptive education, sex and STD education	Nonsexually active participants remain abstinent through the end of ninth grade; among participants, pregnancy rate only two thirds that expected rate.	Youth in other Atlanta schools who did not have the curriculum
Project Taking Charge	Middle school	30 sessions, adult involvement, group discussion, lectures, role play, video; stressing abstinence, behavioral skills development, sex and STD education, life options, self-efficacy and self-esteem	At 6-month follow-up participants showed greater knowledge in sexual development, STDs and the risks of adolescent pregnancy; significant delay in initiation of sexual intercourse	Experimental and comparison groups
Reducing the Risk	High school	16 sessions, adult involvement, group discussion, lectures, roles play; stressing abstinence and norms against unprotected intercourse, behavioral skills development, contraceptive education, and sex and STD education	Significant increase in knowledge of and communication with parents regarding abstinence and contraception; delay in initiation of sexual activity by 18-month follow-up	Experimental and comparison groups
School/Community Program for Sexual Risk Reduction Among Teens	Middle and high schools; community-based	Minimum of 1 y, community-wide education program including adults, teachers, church leaders and young people; provision of contraceptive services and supplies; life options, sex and STD education, self-efficacy and self-esteem, group discussion, lectures, role-play, public service announcements	A significant drop in the pregnancy rate during the full implementation period	Nonserved portion of the targeted county and contiguous counties
School-Linked Reproductive Health Services (Self Center)	Middle and high schools; family planning clinic	Minimum 1 y, case management, group discussion, lectures, video; behavioral skills development, contraceptive education and access, and sex and STD education	Effect on contraceptive behavior greatest among the younger sexually active students, more effective use of contraceptives, delay in onset of sexual activity	Comparison school
Teen Outreach	Middle and high schools	Minimum of once a week during school year; provide behavioral skills development, sex and STD education, life options	Participants had fewer pregnancies, used contraceptives more regularly, and registered better school attendance and academic success	Comparison students in same school during first 4 years of evaluation; during final 5 years, random assignment added at some sites

Table 1

Continued

Program	Site	Interventions	Behavioral impacts	Comparison strategy
Primary prevention				
Teen Talk	Middle and high schools; community-based	Six sessions, group discussion, lectures, video, role play; stresses behavioral skills development, contraceptive education and access, and sex and STD education	Especially beneficial to boys, delay in onset of sexual activity; use of more effective contraceptives among sexually active participants	Random assignments to various programs
Program to Increase the Availability of Condoms	Middle school and high school	School year; contraceptive access, sex ed. and STD education, counseling	Schools where six or more condoms/students/year were obtained had greater condom effectiveness	Comparison schools
I have a Future	Community-based	Focus on abstinence, communication, and adult involvement, comprehensive including job readiness, black values emphasis, drug and alcohol prevention, sex education and life option building	Participants had fewer pregnancies, higher self esteem, fewer self-report for delinquent behaviors; positive effects on sexual and contraceptive knowledge and life options	Experimental and comparison sites
Secondary prevention				
Elmira Nurse Home Visiting Program	Medical clinic	22 sessions, nurse visits to pregnant and young mothers, parenting skills, link family members to health and social services, group discussion, behavioral skills development, contraceptive education, life options, sex and STD education, followed up pregnancy until child's fourth birthday	Participants had 43% fewer repeat pregnancies, postponed the birth of their second child 12 months longer; participated in work force 83% longer, and 80% reducation in child abuse than comparison peers	Experimentnal and comparison group
Health Care Program for First-Time Adolescent Mothers and their Infants	Medical clinic	Case management, video, behavioral skills development, contraceptive education, sex and STD education, follow up teens until 18 months postpartum	Participants had fewer repeat pregnancies, were less likely to use the emergency room for routine care, and were more likely to obtain immunizations for their newborns than comparison group	Experimental and comparison group
Queens Medical Center's Comprehensive Teenage Pregnancy program	Medical clinic	Case management, video, behavioral skills development, contraceptive education, life options, sex and STD education, follow up teen until age 20	Group participants had higher school attendance, graduation and regular contraceptive use and a lower repeat pregnancy rate	Experimental and comparison group
The Ounce of Prevention Fund's "Parents Too Soon Program"	Community-based	2-year, nurse home visit, parent group (peer-support model), parent skills development, contraceptive education, life options, and sex and STD education	Comparison group were 1.4 times more likely to experience a subsequent pregnancy than intervention group	Comparison consisted of a sample from the National Longitudinal Survey of Youth
School-Based Intervention Program for Adolescent Mothers	High school	Group discussion, lectures, behavioral skills development, contraceptive education, life options, sex and STD education, follow up pregnancy until delivery	More favorable outcome for teenagers enrolled for more than 7 weeks; at 2 and 5 years, participants were less likely to have experienced a second pregnancy and showed greater educational attainment and economic self-sufficiency than others enrolled for less than 7 weeks	Comparison group consisting of teenagers enrolled for less than 7 weeks in the program

cation of the components that contribute to program success or failure.

Theoretical framework

Multiple factors are associated with the high rates of pregnancy and childbearing among adolescents. Intrafamilial, social-cultural, intrapersonal, and biologic factors impact on an adolescent's behavior and pregnancy risk [9]. Intrafamilial factors include parenting influences, such as a multigenerational history of teenage parenting, and parenting skills. Having a sibling who is a teenage parent increases the risk of pregnancy [9]. Social-cultural factors include the community and social environment. In communities with high levels of poverty and unemploy-

ment resulting in hopelessness, adolescents may learn from other adults that few opportunities exist for labor force participation, that there is often little value in educational attainment, and that the perceived benefits of either contraception or avoiding sexual activity are minimal. Teens who become pregnant also have a strong influence on other teens in the commumity [9]. Interviews with unwed mothers in impoverished circumstances often reveal the hope that a child will bring meaning to their lives [10•]. Intrapersonal factors such as concrete cognitive level, poor self esteem, depression, substance use, history of sexual abuse, and school failure all have been associated with adolescent pregnancy [9,11]. Biologic and physical development is an additional factor. Accompanying the trend toward earlier age of menarche, there has been a steady decline in age of sexual debut [11], which then occurs at a time that the adolescent's cognitive skills for decision making are still unsophisticated. Hence, the gap between sexual and social maturity has increased in modern times. Developmentalists link pregnancies to variations in the ability to think abstractly and predict the future [10•,12].

Demography

Adolescent pregnancy rates in the United States are three to 10 times higher than those found among industrialized nations of western Europe, and poverty rates in the United States are higher by a similar magnitude [13]. Currently, 56% of unmarried girls and 73% of unmarried boys aged 15 to 19 years have had sexual intercourse; about 20% of girls and 33% of boys have had sexual intercourse before age 15 [14]. Although the overall teenage pregnancy rate has risen, the pregnancy rate among sexually experienced teenagers has actually declined by nearly 20% over the past two decades. This suggests that sexually active girls are using more effective contraception. However, despite the drop in the pregnancy rate for teenagers 15 to 17 years, the number of births for this age group increased by 2% between 1993 and 1994, reflecting an increase in the number of teenagers in this age group [1].

In the latest state-by-state statistics, teen birth rates between 1991 and 1994 declined in 37 states. Between 1991 and 1995 the birth rates for teens in America aged 15 to 19 years decreased by 8% [1,4]. Of national interest, the nonmarital teen birth rates have risen steadily [15]. The proportion of 15- to 19-years-olds who were married was less than 5% in 1994 as compared with 14% in 1970 [1].

As the recent national welfare debate has highlighted, adolescent pregnancies place a high financial burden on the United States. In 1990 the US government spent over $25 billion on behalf of all families in which the first birth occurred when the mother was a teenager, not including job training, housing subsidies, special education, foster care or day care and the Special Supplemental Food Program for Women, Infants and Children [16•]. Therefore, preventing teen pregnancy has been a critical part of the Clinton Administration's approach to welfare reform and their efforts to strengthen US families. Under the new welfare law, the US Department of Health and Human Services (HHS) will award a bonus to as many as five states in the country that have the largest decrease in out-of-wedlock births while also having abortion rates lower than in 1995. The bonus will equal $20 million per state if five states qualify, and $25 million per state if fewer states qualify. The new welfare law will also provide $50 million a year in new funding for state abstinence education activities, beginning in fiscal year 1998 [17•].

Prevention programs

Reviews of some of the specific programs and strategies that have shown positive impacts on sexual activity, contraceptive use, teen pregnancy, or teen births are shown in Table 1. Teen pregnancy prevention approaches include skills building, group support, service provision, and enhanced life options. Most effective programs combine these strategies in some way. Programs have operated from a variety of settings, including schools, youth service agencies, other community-based agencies, housing projects, and clinics. In a variety of both urban and rural geographic locations, most have worked across an age span; several involve parents, and they vary in length from a few hours to several years.

Descriptions of the programs were abstracted from a report by HHS released at a White House press conference on June 13, 1996; 23 effective programs were evaluated by the Institute of Medicine and the Program Archive on Sexuality, Health, and Adolescence (PASHA) collection [16•,18,19•]. Seventeen programs have been selected (Table 1). The actual measure of the effectiveness varies from program to program, *ie*, some were found to delay the age of first intercourse and some were found to improve contraceptive use [6•,20,21•,22•].

One of the most helpful reviews of program interventions and their evaluations to date is the recent information and packet created by PASHA. PASHA identifies programs aimed at preventing pregnancies and sexually transmitted diseases among teenagers and makes materials from interventions with demonstrated effectiveness available to practitioners around the country for use in schools, community organizations, and clinics. Six primary prevention programs promote abstinence, but not as an exclusive choice for adolescents. Four instructional techniques or components of program delivery predominate: group discussions, lectures, role-plays, and videotapes. Adult involvement (such as special evening sessions introducing parents to school-based programs

and encouraging communication with their children regarding sexuality) is a component of more primary than secondary pregnancy prevention programs. Case management is common in secondary pregnancy prevention programs, in which adolescent mothers receive a broad array of services matched to their educational, social, and psychologic needs. Finally, drawing on principles of social learning theory, a few primary prevention pregnancy programs invite specially trained adolescents to serve as peer counselors or leaders, thus aiming to provide persuasive and powerful models for participants. It appears that programs directed to high-risk youth (such as gay and bisexual teenagers or runaways) are the most intensive, involving perhaps 30 to 40 hours of participation. In contrast, programs directed toward a wider audience, often implemented as family life education programs, may span a few weeks but often involve only 5 to 15 hours of instruction [18].

The following features appear in more than one program that has reported positive results in affecting teen pregnancy and its antecedents: strong one-on-one support from a responsible adult, *eg*, supporting parenting and mentoring; attention to basic cognitive skills and educational achievement and attention to the world of work, particularly in schools; attention to the specific skills necessary to avoid pregnancy through school groups; involvement of community members so as to enhance the likelihood of choosing culturally appropriate and locally relevant interventions; focusing on peer influences; and using some interventions that reach young people very early as sexual activity begins at very young ages for many of them [6•].

It is clear that information alone is not sufficient to alter teen pregnancy rates and that no single intervention will work for all teens or last throughout the adolescent years. School-based clinics have generated controversy in many communities, and despite their potential contribution to health, no convincing evidence has yet proven that they can affect teen pregnancy rates. Making contraceptives available is a necessary condition to preventing teen pregnancy but it is not sufficient. There is as yet no evidence that programs that are directed only toward abstinence can prevent teen pregnancy. The most successful abstinence-based programs delay the onset of sexual intercourse for only a few months [6•].

For programs targeting younger adolescents, evidence of a program's positive impact on skills, values, or attitudes as preliminary measures of effectiveness is well accepted. Human Sexuality–Values and Choice, for example, demonstrated a positive impact on participants' beliefs about the consequences of sexual activity as well as on their perception of the frequency of intercourse among peers. In secondary prevention programs, the repeat pregnancy rate was the principal outcome documented in most interventions. For example, the Queens Medical Center's Comprehensive Teenage Pregnancy Program observed an increase in participants' contraceptive use after the birth of their first child. Other programs that have proved successful in lessening the repeat pregnancy rate include the Elmira (NY) Nurse Home Visiting Program, The Polly T. McCabe Center in New Haven, CT, and The Ounce of Prevention Fund's "Parents Too Soon Program." However, the "Dollar-a-Day Program," which is a peer-based, incentive program, could not demonstrate success in preventing repeat pregnancy [23•].

Among the primary pregnancy prevention programs, three behavioral impacts are important: increased abstinence or delay in initial intercourse, improved patterns of contraceptive behavior, and lower pregnancy rates. Programs studied to date have had little effect on the number of sexual partners or the frequency of intercourse among already sexually active teenagers.

In designing effective programs, health professionals need to recognize the roles of older men in teen pregnancy, the relationships between teen pregnancy–related behaviors and other risk behaviors among teens such as school failure, violence, and alcohol and drug use, and the association of sexual abuse and teen pregnancy. Media messages that portray and promote sexual intercourse without consequences need to be addressed. Implementation of an effective intervention should be preceded by an effort to isolate variables that most influence the behaviors in question for the individuals of interest. Awareness that adolescents differ in their physical, cognitive, emotional, and moral and social maturity is essential in program design. Intervention programs must be able to accommodate an individual adolescent who may be mature in one developmental aspect but immature in another.

Discussion and recommendations

Teen pregnancy is a multifaceted problem related to economic, educational, social, cultural, and political factors affecting today's youth. Giving the complexity of the problem, a multidisciplanary approach is required. Measuring all the factors that help adolescents postpone premature sexual activity and avoid pregnancy is difficult. Changing behavior that is known to lead to pregnancy and sexually transmitted diseases among teenagers, as opposed to change simply in knowledge and attitudes, has emerged as the standard criterion of effectiveness [16•].

Several approaches have had some success in encouraging abstinence and promoting contraceptive use among teens. Promising strategies have also emerged to reduce the number of repeat pregnancies among adolescents. Recent declines in the teen birth rate, and indication of further declines in the teen pregnancy rate, suggest that the numerous public- and private-sector efforts across

the country to prevent teen pregnancy are having a positive impact. However, evaluations of programs need to be funded and substantially enhanced so that successful programs can be replicated in the future. Thus far, much is known about how to affect teen pregnancy, teen births, and their antecedents. Nevertheless, it is now clear that there is no single solution to the problem. No single curriculum and no single clinic-based or community-based approach have been found to reduce the high rates of pregnancies and births to teenagers.

To reach adolescent populations at risk for premature sexual activity and pregnancy, we must develop comprehensive efforts specially tailored to the unique needs of adolescents. We must build partnerships among national, state, and local organizations; schools; health and social services; businesses; religious institutions; federal; state and local governments; and communities and parents. Emphasizing personal responsibility for young people and providing them with opportunities for success are critical issues.

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References and recommended reading

Papers of particular interest, published within the annual period of review, have been highlighted as:

- • Of special interest
- •• Of outstanding interest

1. Ventura SJ, Clarke SC, Matthew's TJ: **Recent declines in teenage birth rates in the United States: variations by state, 1990–94.** *Monthly Vital Statistics Report* 1996, **45**:1–6.

2. Spitz AM, Velebil P, Koonin LM, Strauss LT, Goodman KA, Wingo P, Wilson JB, Morris L, Marks JS: **Pregnancy, abortion, and birth rates among US adolescents: 1980, 1985, and 1990.** *JAMA* 1996, **275**:989–994.

3. • Maynard R, ed: **Kids Having Kids.** A Robin Hood Foundation Special Report on the Cost of Adolescent Childbearing. New York: Robin Hood Foundation; 1996.

This is an excellent resource for information about the consequences of adolescent childbearing for adolescent mothers, for their children, for the fathers of the children, and for the nation.

4. US Department of Health and Human Services: **Secretary Shalala launches national strategy to prevent teen pregnancy: new state-by-state data show decline in teen births rate.** *Human and Health Services News* 1997:1–3.

5. Brown SS, Eisenberg L, eds: **Consequences of unintended pregnancy.** In *The Best Intentions: Unintended Pregnancy and the Wellbeing of Children and Families.* Washington, DC: Institute of Medicine, National Academy Press; 1995:50–80.

6. • Philliber S, Namerow P: **Trying to maximize the odds: using what we know to prevent teen pregnancy.** *Document* prepared for technical assistance workshop to support the Teen Pregnancy Program, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers of Disease Control and Prevention, Atlanta, GA, December 13–15, 1995.

The purpose of this document is to describe teen pregnancy prevention strategies that have at least marginally credible evaluations and seem to postpone sexual intercourse, increase contraceptive use, lower pregnancy rates, and prevent births.

7. US Department of Health and Human Services, Public Health Services. *National health promotion and disease prevention objectives. Healthy People 2000.* Boston: Jones & Barlett Publishers, 1996.

8. Cox JE, DuRant RH, Emans SJ, Woods ER: **Early parenthood for the sisters of adolescent mothers: a proposed conceptual model of decision making.** *Adolesc Pediatr Gynecol* 1995, **8**:188–194.

9. Litt FI: **Pregnancy in adolescence.** *JAMA* 1996, **275**:1030.

10. • Rodriguez C Jr., Moore NB: **Perceptions of pregnant/parenting teens: reframing issues for an integrated approach to pregnancy problems.** *Adolescence* 1995, **30**:685–706.

This is an interesting investigation determining the correlation, if any, between personal, family, and educational background factors and unintended pregnancy. The findings provide valuable information for researchers, health educators, policy makers, and parents who wish to ameliorate the problems in teen pregnancy and parenting by reframing issues for a more integrated approach involving both prevention and intervention.

11. Cates W Jr: **Contraception, unintended pregnancies, and sexually transmitted diseases: why isn't a simple solution possible?** *Am J Epidemiol* 1996, **143**:311–318.

12. Smith SS: **Teenage sex–cognitive immaturity increases the risk.** *BMJ* 1996, **312**:390–391.

13. Cheng L, Cheng PTK: **Adolescent pregnancy.** *JAMA* 1996, **276**:282–283.

14. **Adolescent pregnancy prevention stats.** *Handout from Society of Adolescent Medicine.* Washington, DC: Department of Health and Human Services; 1997.

15. Moore KA, Snyder NO: **Facts at a glance.** *Child Trends, Inc.* 1996.

16. • Card BJ, Niego S, Mallari A, Farrell WS: **The Program Archive on Sexuality, Health and Adolescence: promising "prevention programs in a box".** *Fam Plann Perspect* 1996, **28**:210–220.

This is one of the most inclusive reviews of program interventions and evaluations to date with recent information created by the PASHA. PASHA identifies programs aimed at preventing pregnancies and sexually transmitted diseases among teenagers and makes materials from interventions with demonstrated effectiveness available to practitioners around the country for use in schools, community organizations, and clinics.

17. • US Department of Health and Human Services: **A national strategy to prevent teen pregnancy.** *Health Hum Services News* 1997:1–6.

The US Department of Health and Human Services has responded to a call from the President and Congress for a national strategy to prevent out-of-wedlock teen pregnancies and to assure that at least 25% of communities in this country have teen pregnancy prevention programs in place. This gives a comprehensive review of the principles that research and experience report are key to promising community efforts, approaches to strengthen the national response to prevent out-of-wedlock teen pregnancies, and summaries of Health and Human Services programs to prevent teen pregnancies, including promising ones and approaches that work.

18. US Department of Health and Human Services: **Prevention teen pregnancy: promoting promising strategies. a guide for communities.** *A report by HHS released at the White House press conference.* Washington DC: Department of Health and Human Services; 1996.

19. • Brown SS, Eisenberg L, eds: **Programs to reduce unintended pregnancy.** In *The Best Intentions: Unintended Pregnancy and the Wellbeing of Children and Families.* Washington DC: Institute of Medicine, National Academy Press; 1995:21–49.

This is an excellent report by the committee and staff on unintended pregnancy of the Institute of Medicine established to explore the relationship of unintended pregnancy in the United States to the health and well-being of children and families. Recommendations are made for policy, practice, and research. In this particular chapter, description of the range of programs that have been organized in the past 10 years or so to reduce the incidence of unintended pregnancy and comment on the effectiveness of various approaches are included.

20. ACOG Committee Opinion: **Condom availability for adolescents.** *J Adolesc Health* 1996, **18**:380–383.

21. Title V of the Social Security Act: **Abstinence education.**
- ftp://ftp.loc.gov/pub/thomas/clo4/h3734.enr.txt

This handout defines abstinence education and describes the focus of the abstinence program.

22. 17. US Department of Health and Human Services: **Girl power!**
- **Hometown media kit.** *SAMHSA: Center for Substance Abuse Prevention. Prevention Works!* www.health.org.

The Girl Power! abstinence education initiative will engage all Health and Human Services teen pregnancy prevention and related youth programs in sustained efforts to promote abstinence among 9- to 14-year-old girls and will include a national media campaign to involve parents and caring adults in sending a strong abstinence message across the country. This is an excellent packet reviewing the campaign goal and objectives, tips for success, and description of the campaign product in this kit.

23. Stevens-Simon C, Dolgan IJ, Kelly L, Singer D: **The effect of monetary**
- **incentives and peer support groups on repeat adolescent pregnancies.** *JAMA* 1997, **277**:977–982.

This is a 2-year peer-based, incentive program designed to prevent adolescent pregnancies by promoting the consistent use of reliable contraceptive methods and future-oriented family and career planning. It was found that although a monetary incentive draws adolescent mothers to sites where they can discuss the costs and benefits of contraceptions and conception with knowledgeable adults, and supportive peers, these discussions did not prevent repeat pregnancies.