The National Campaign to Prevent Teen Pregnancy

Welfare Reform Resource Packet
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Section VI

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Adolescent Abstinence Promotion Programs:

An Evaluation of Evaluations

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Over the past several decades, levels of sexual activity among adolescents have increased considerably. Among the age cohort born between 1963 and 1974, 61 percent of the men and 58 percent of the women had sexual intercourse by age 18, well below the 43 percent of men and 32 percent of women born between 1933 and 1942 (U.S. Department of Health and Human Services, 1995). Both the pregnancy and birth rates to teens in the United States are higher than the rates for teens in most industrialized nations (Alan Guttmacher Institute, 1994). A recent study estimates that adolescent childbearing costs U.S. taxpayers approximately $6.9 billion each year in direct program costs and somewhere between $9 billion and $21 billion per year in other social costs (Maynard, 1996).

Federal Policy

Despite the human and economic costs widely believed to be associated with adolescent pregnancy and childbirth, federal policy makers expressed little interest in the problem until the mid-1970s, a time when adolescent pregnancy and childbirth rates were actually declining (Vinovskis, 1988). The timing of Congressional interest seemed to be the result of several factors. First, a highly publicized report by the Alan Guttmacher Institute (1976) detailed the extent of the problem of adolescent pregnancy and parenting. This report was frequently referenced by policy makers in their deliberations on the question of how to respond to the issue of adolescent pregnancy. Second, federal costs associated with adolescent pregnancy and childbearing grew through the 1970s, around the same time that public support for welfare policies and their recipients began to wane (Garfinkel & McLanahan, 1986). Third, with the widespread legalization of abortion in 1973, abortion rates for adolescents increased markedly, attracting the interest and concern of anti-abortion legislators. Finally, adolescent mothers increasingly chose to keep their children rather than giving them up for adoption and, additionally, were less likely to marry either

prior to or after the child's birth (Luker, 1996). This last demographic trend--the increasing rate of nonmarital childbearing among adolescents--has had the effect of making adolescent mothers more visible to the public. The combined set of factors spurred legislative action.

The Adolescent Health Services and Pregnancy Prevention and Care Act of 1978 (Title VI of the Health Services and Centers Amendments Act) represented the first federal legislation explicitly and exclusively directed to the issue of adolescent pregnancy and childbearing. The original legislation focused heavily on pregnancy prevention and sexuality education, but advocates for services for pregnant and parenting adolescents succeeded in having the bill amended to focus much more heavily on services for these adolescents than on prevention. The Title VI program was severely restricted by limited funding, and the program was finally dismantled by Congress in 1981.

Concerned that federal family planning services condoned adolescent sexual activity by making contraceptives available to teens, Senate conservatives led an effort resulting in the passage of the Adolescent Family Life Act (AFLA, Title XX of the Public Health Service Act). AFLA was designed to continue support for programs for pregnant and parenting adolescents but to fundamentally change the nature of prevention programs it supported. The sponsors of this legislation argued that prevention efforts including information about contraceptive use sent a message to teens that sexual relations were acceptable or inevitable, thereby promoting sex outside of a monogamous marriage. As finally approved by Congress and signed by President Reagan, the Adolescent Family Life Act restricted prevention activities to those that promoted sexual abstinence as the sole means of preventing pregnancy and exposure to sexually transmitted diseases, prompting critics to dub it the "Chastity Act." In the 15 years since the enactment of AFLA, millions of dollars have been spent by the federal government to support what have been called "abstinence-only" sex education. While the federal government funding for these projects diminished substantially after 1992, many of the programs funded during the 1980s have been and continue to be implemented in communities around the country, despite the fact that very little

information exists in the professional literature concerning the effectiveness of these programs.

Characteristics of AFLA-Supported Abstinence-Only Programs

Typically, the curricula plans we reviewed were designed for junior or senior high school students and presented over 4 to 9 sessions typically lasting an hour. Through workbook exercises and classroom discussions, occasionally led by peers and occasionally involving parents, students were taught that abstinence is the only healthy and effective means of preventing pregnancy and sexually transmitted diseases. Generally, the programs sought to inculcate values and beliefs supportive of sexual abstinence prior to marriage through exercises designed to: shape values and attitudes, increase family communication about sexual values, increase knowledge about sexual development, and increase self-esteem.

While abstinence-only programs are being promoted widely in communities throughout the country as an effective tool in reducing adolescent sexual activity, pregnancy, and sexually transmitted disease, little information is available with which to evaluate such claims. Despite the fact that all AFLA prevention grant recipients were required to conduct and submit evaluations of their projects, few of these evaluations have found their way into print. We attempt to address this problem by reviewing a sample of both AFLA-funded and non-AFLA-funded evaluations of abstinence only programs.

Study Design

We began our project with the intention of conducting a rigorous, quantitative meta-evaluation of abstinence-only programs, particularly those funded under AFLA, but quickly found that the limitations of most of the evaluations precluded that strategy. Instead, we chose to conduct a more traditional review the characteristics of the evaluations and, on the basis of the best evaluation studies, describe what conclusions we felt could fairly be drawn.

The programs we included in this review are: "Sex Respect" (Weed, Olsen, & Hooper, 1987; Eisenman, 1994); "Teen Aid" (Weed, Olsen, & Tanas, 1989); "FACTS" (Weed & Olsen,

1990); "Values and Choices" (Donahue, 1987); "Best Friends" (Rowberry, 1995); "Living Smart" (Young, Core-Gebhart, & Marx, 1992); "Success Express Program" (Christopher & Roosa, 1990; Roosa & Christopher, 1990); "Choosing the Best" (Vessey, 1994); "Education Now and Babies Later" (ENABL; a variant on "Postponing Sexual Involvement) (Kirby, Korpi, Barth, & Cagampang, 1995); and a study comparing "Sex Respect," "Teen Aid," and "Values and Choices" (Olsen, Weed, Daly, & Jensen, 1992; Weed & Jensen, 1993). This is far from a complete analysis of all the abstinence-only programs. They represent a mix of AFLA-funded and non-AFLA-funded programs. Many of the original AFLA-funded programs were implemented on a very small scale and appear to have had no life beyond their AFLA funding. Those reviewed, on the other hand, were all larger scale programs which continue to be implemented in various communities.

We examined several aspects of these program evaluations:

- Basic hypotheses and assumptions of the researchers
- Study design and methodology
- Data analysis
- Researchers' interpretations of the results and conclusions about the program's effectiveness

Study Results

Our study revealed numerous common flaws among the program evaluations that we examined.

Hypotheses and Assumptions

Few of the evaluations mentioned theories of adolescent development or models of behavior change underlying the interventions. Occasionally, evaluation reports contained a variety of statements about the correlates of adolescent sexual activity. For example, Weed and colleagues (1989) stated that adolescent sexual activity (not pregnancy or childbirth) interferes with educational achievement and the quality of future relationships, but they cite no evidence in support

of this statement. A number of investigators either stated explicitly or implied that attitude change is a good proxy for behavior change (Olson et al., 1993; Weed et al., 1989; Eisenman, 1994; Young, Core-Gebhart, & Marx, 1992; Vessey, 1994), while others explicitly acknowledged the problems associated with using attitudinal measures, particularly as the sole outcome variables (Roosa and Christopher, 1990; Kirby et al., 1995)

Design and Methodology

Surprisingly, several evaluators failed to provide even the most basic information about the participants in their studies, such as their ages, racial and ethnic backgrounds, how they came to participate in the study, and the sample size. Only three of the evaluations provide substantial information on sample characteristics (ENABL, Success Express, Values and Choices). Three evaluations provide almost no information about the participants (Living Smart, Sex Respect, FACTS) and the others provide moderate but incomplete information about the samples.

Several of the weaker evaluations provide very confusing descriptions of the sample. For example, the evaluator of "Choosing the Best" states that "over 6000 adolescents" participated in the study, but only 3840 are included in the final sample (those who completed both the pre- and post-tests). No comment or analysis is offered regarding the missing 2160 participants (36% of the participants). We also find it unusual, to say the least, that the original sample is described as being "over 6000." Several of the evaluations failed to note other important descriptive information, such as the grades of the participants and the type (public vs. private) and location (urban, suburban, rural) of the participating schools. Most of the evaluations failed to note whether participation in the intervention was voluntary or mandatory or whether students and families were allowed to opt out of the programs.

Most researchers utilized limited and inadequate dependent measures in their evaluations. Only four of the evaluations contain behavioral measures or even self reports of behavior (ENABL, the two Success Express evaluations, and Living Smart). The others relied completely on measures of attitudes, values, and knowledge. This is particularly problematic when evaluating

programs with the main objective of preventing the onset of sexual activity. The next overhead (overhead 1) gives an example of the types of attitude/value scales typically used. Adequate discussions of the psychometric properties of the dependent measures were provided in only three of the evaluations (ENABL, Success Express).

The problems created by the use of inadequate dependent measures is compounded in most of the evaluations by the use of very weak research designs. Only one study used a true experimental design (ENABL), illustrated by the next overhead (overhead 2). This is not terribly surprising; convincing schools, funders, parents and others of the need for random assignment and no-treatment control groups is difficult in the real world. What proved surprising was that few of the evaluations even utilized quasi-experimental designs. Only the two Success Express and the Living Smart and Values and Choices evaluations included no-treatment controls groups, and the study comparing the three programs (Sex Respect, Teen Aid, Values and Choices) used another quasi experimental design. The other five evaluations employed single-group, pretest-posttest designs. These latter designs, with their many limitations, preclude conclusions regarding the effects of the programs. Lacking control or comparison groups, it is impossible to attribute changes in measures of attitudes solely to the abstinence programs. Moreover, with only three exceptions, the evaluators collected data on the dependent variables at the conclusion of the program only. In other words, only three of the evaluations included followup data.

Data Analysis

With only four exceptions (ENABL, Values and Choices, the two Success Express evaluations), the evaluators failed to adequately report the results of their evaluations. They commonly failed to provide such critical information as type of statistical test, sample sizes, means, standard deviations, and significance levels. In at least one case (Choosing the Best) it was not at all clear that the data were analyzed. Omission of critical statistical information made it impossible for us to determine whether several evaluators employed appropriate statistical tests. Sometimes statistical information is provided which makes it clear that the evaluator has a limited grasp of the

appropriate inferences to be drawn from the data (overhead 3). Comparing this overhead to the questionnaire in overhead 1, we see that the "statistically significant" findings represent minuscule changes from pretest to posttest on the attitude items. The statistical test used in this instance also failed to control for correlations among the items. From the information provided, we concluded that most of the evaluations employed simplistic and frequently inappropriate analyses (i.e., multiple t-tests). Multiple univariate analyses were commonly used when multivariate analyses were more appropriate.

Interpretations and Conclusions

Despite the many flaws contained in most of the evaluation reports, we were surprised by the willingness of many of the evaluators to draw conclusions wholly unwarranted by the data. It seemed that the certitude expressed by the evaluators was inversely related to the quality of the evaluations. The weakest evaluations uniformly concluded that the abstinence programs in question had resulted in significant changes in the pro-abstinence values and attitudes of their participants. Several of these evaluations went further, concluding that other variables such as sexual activity and teen pregnancy were very likely to change *as a result of the changes in attitudes and values*. Given the extensive research on the relationship between sexual attitudes, intentions, and sexual behavior, we remain skeptical. We are particularly skeptical because only one evaluation clearly stated that they had utilized appropriate methods to secure accurate self-report information from the study participants.

The best evaluations, on the other hand, were considerably more cautious in drawing conclusions, given the limitations of the studies. These studies--ENABL, Values and Choices, and the two Success Express evaluations--also found less cause for enthusiasm regarding the efficacy of these programs. The Values and Choices evaluators found no changes in sexual activity and small knowledge and pro-abstinence attitude changes which disappeared within three months. The first Success Express evaluation found only one significant effect for the program (as compared to the no-treatment control group): participants were *more likely* to increase their sexual

activity than nonparticipants. No other differences were found. The second Success Express evaluation found no changes for program participants for premarital sexual attitudes or behaviors, self esteem, or family communication. This study found a nonsignificant trend for participants to increase their sexual activity relative to nonparticipants.

The strongest evaluation was clearly the ENABL study, which utilized a true experimental design and a large sample. The results of this evaluation are no more encouraging. At three months post-intervention, the evaluators found several small but statistically significant positive effects on mediating variables for the program, including their perceived self-efficacy in saying *no* to sex, their intention to resist efforts to get them to have sex, and their belief that teen sex is not inevitable. Unfortunately, these mediating variables did not translate into behavior change. No differences were found at three months with respect to sexual and contraceptive behavior, pregnancy rates, and STD rates. At the 17 month followup, all positive effects had vanished and no delayed effects occurred.

Discussion

Under the Adolescent Family Life Act, the federal government has spent millions of dollars to support abstinence-only sex education. Evaluators of many of the funded programs have concluded that the curricula are effective in promoting attitudes of sexual abstinence and in decreasing sexual activity among teens. Our review of a set of these evaluations suggests that these claims are unwarranted. We are aware of no methodologically sound studies that demonstrate the effectiveness of curricula that teach abstinence as the only effective means of preventing teen pregnancy. Instead, the best evaluations of abstinence-only programs find no cause for optimism. None of the best studies found positive changes in behavioral variables such as rates of sexual activity, pregnancies, or STDs. The few attitudinal changes found in two of the evaluations disappeared within a few months of the programs' ending.

There is no credible evidence supporting the effectiveness of abstinence-only programs. The best studies conducted to date suggest that several of the programs reviewed in this analysis, at

least as implemented thus far, are generally ineffective. Methodologically sound studies of more comprehensive sexuality education programs, most of which include significant components stressing the value of abstinence and offering behavioral strategies for avoiding unwanted intercourse, indicate that these "abstinence-plus" programs can be successful in delaying the onset of sexual acuvity and in reducing rates of unprotected intercourse among teens (Frost & Forrest, 1995; Kirby, Short, Collins, et al., 1994), but even here, the results are not overly encouraging.

Despite the absence of findings supporting abstinence-only sex education, such programs continue to proliferate and be adopted by schools. Additionally, federal support for such programs is about to increase dramatically. The Personal Responsibility and Work Opportunity Act of 1996, which was signed into law by President Clinton on August 22, 1996, contains a provision that will provide $50 million in annual grants to states for abstinence-only programs, beginning in 1998 (overhead 4). Additionally, after years of decreasing funding for the AFLA abstinence-only program, Congress dramatically increased its funding.

Our review of what many consider to be the best of the abstinence-only programs suggests to us that if the federal government is to be responsible, both fiscally and ethically, in its efforts to reduce rates of teen pregnancy, it must first practice more diligent oversight over its pregnancy prevention efforts. The quality of the AFLA evaluations funded by the federal government vary from barely adequate to completely inadequate. At this point it is not clear that states receiving abstinence education grants under the Personal Responsibility and Work Opportunity Act will be required to conduct evaluations of any sort as a condition for receipt of further funding. Secondly, the government would be wise to support additional research on comprehensive abstinence-plus programs in light of the modestly promising findings from some evaluations of these programs. Given the current political climate, it is not at all clear that either of these courses will be pursued.

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Those who work on social change matters -- all of us -- may well remember the 1990s as the "what works?" era. Everywhere we go, the question is posed -- by foundations, by public officials, by community activists, by the press. The assumption is that surely, by now, after several decades of serious effort to make life better on many fronts, especially for those who are poor, we would have a reasonable grasp of how best to address our current problems -- violence, drug abuse, teen pregnancy, drunk driving, public safety, delinquency, truancy, on and on and on. Money seems ever scarcer for community change, so the need is pressing to do only that which has some glimmer of hope.

Our focus today is sex education and abstinence programs, and we are asking not only what works, but how can we organize ourselves to learn more in the next few years. To meet those twin goals, this paper summarizes two recent reviews of program effectiveness -- one by the Institute of Medicine and one by Wilcox and colleagues. It also notes some major problems faced by scientists who would like to do more program evaluation in this field. The paper concludes with a question and a brief comment that I hope the conference will ponder as the agenda proceeds.

Before launching into these topics, I want to set the context for my own particular interest in the "what works" question as applied to sex education and abstinence programs. It is my good fortune at present to be serving as the director of the new National Campaign to Prevent Teen

Pregnancy, and in that capacity, I have spent many hours in recent months talking with experts on teen pregnancy and trying to make certain that the Campaign is set up to be useful, well-grounded in the best information available, and appealing to a wide variety of constituencies throughout the land.

One thing is crystal clear from these early months of work: everyone agrees that it would be wonderful if we could reduce teenage pregnancy. There are strongly divergent feelings, however, on how to do so. Some emphasize the need to reduce sexual activity among teens, while others feel that is a quixotic quest and that the real need is for more contraception. Some focus mainly on changing the behavior and values of adults, claiming that teens only reflect what goes on around them (thus a major teen pregnancy prevention campaign in California has as its motto, "teen pregnancy is an adult problem"). Others believe that more community coalitions are needed to improve matters, or that the media must be reformed. Some are interested in vigorous enforcement of the statutory rape laws to discourage men from having sex with minors, while others emphasize adult mentoring.

In the midst of this morass of strongly held views, it is critically important to stick to the facts. Accordingly, one of the Campaign's first steps was to establish a task force on Effective Programs and Research. Dr. Kristin Moore, who participated in Panel 1, chairs that groups which includes Dr. Kirby among its members. This task force's mandate is to make certain that the Campaign is as soundly based in science as possible -- to ask if our activities match research findings, to stimulate new research where needed, and to point out where the facts don't match the rhetoric -- ours or others.

The very first task the group set for itself was to review what is known about effective programming to reduce teen pregnancy, as Doug has already described. For several reasons, we have a deep and sincere interest in programs (including sex education curricula) that stress abstinence. First, abstinence, when it works, works perfectly -- and for that reason alone it must always be included in the list of possible approaches. Second, there are many groups who are heavily invested in this remedy, and because we are eager to include a wide variety of perspectives in our work (the "big tent" approach), we have given a lot of time to understanding various approaches to abstinence education. Third, we have noted the steadily decreasing age of first intercourse in recent years and understand that one obvious strategy to reduce teen pregnancy would be to arrest the decline and perhaps even reverse it. And fourth, our strong sense is that most adults would prefer that teens be abstinent in their early and middle years of adolescence. Although the consensus begins to break down by the time 17 year-olds are being considered -- and certainly 19 year-olds -- there seems little disagreement about the importance of abstinence at younger ages. For all these reasons, the National Campaign to Prevent Teen Pregnancy is very interested in abstinence and we were most pleased to be included in this conference.

Remember, incidently, that abstinence programs come in many forms. Some programs stress abstinence alone and decline to discuss contraception; this is the so-called abstinence-only approach. Some of these, in turn, insist on abstinence until marriage; others are less precise but prefer abstinence through high school or until "adulthood," variously defined. Another set of programs -- the abstinence plus ones -- also stress abstinence but include instruction on contraception; they tacitly recognize that many young people do not remain abstinent and

therefore attempt to protect them from the risks of both unintended pregnancy and STDs by providing a lot of information and skills to use the information..

So, what do we know about the effectivness of abstinence education? Both Dr. Kirby and Dr. Moore have referred to their own comprehensive reviews of "what works." I want to add two others. The first is a review of about 25 programs designed in some way to reduce unintended pregnancy, completed by a committee of the Institute of Medicine (IOM) and published in 1995. The second is a review by Wilcox and colleagues, presented last March at the Society for Research on Adolescence. Both reviews share in common a value-neutral approach to the question of efficacy. That is, they looked for findings based on high quality research, not on ideology.

The IOM review considered those programs whose various outcome measures or stated goals were 1 or more of the following: (1) raising the age of first intercourse, (2) improving contraceptive use (or, similarly, decreasing unprotected sexual activity), and (3) reducing pregnancy among adolescents, including rapid repeat pregnancy. To be considered "evaluated," a program must have met the following criteria: (1) the evaluation was completed since 1980; (2) the evaluation was performed using an experimental or quasi-experimental design; (3) the evaluation measured behavioral outcomes (e.g., sexual activity or contraceptive use), not just attitudes; and (4) the evaluation results were published in peer-reviewed journals. With these criteria in mind, a national search was conducted to learn about local programs to reduce unintended pregnancy and, in particular, to identify programs whose results had been evaluated.

This search resulted in the identification of more than 200 programs that in some way

address unintended pregnancy. However, only 23 met the evaluation criteria; most were some form of a sex education curricula -- an abstinence-only or an abstinence-plus approach.. These programs are a small and unique subset of the many programs now under way that deal with issues of sexual activity and contraceptive use. Nevertheless, because their effectiveness has been assessed carefully, they constitute the available body of knowledge regarding how to intervene effectively at the local level to reduce unintended pregnancy. Since the IOM report was published, a couple more programs have released good evaluation data, but these do not materially change the conclusions of the IOM report.

Here are some of the main findings that emerged from this review of the 23:

1. Knowledge about how to reduce unintended pregnancy at the local level is very limited. Only 13 of the evaluated programs were even somewhat effective in changing sexual and/or contraceptive behaviors that increase the risk of unintended pregnancy. Thus, knowledge about how to reduce unintended pregnancy through local programs is still quite limited. It is also apparent that even among those programs that did report varying degrees of success, the magnitude of impact was sometimes small. Success in raising the age of first intercourse, for example, is typically measured in increments of months, not years, as was the case with the Self Center in Baltimore.

2. There is insufficient evidence to determine whether abstinence-only programs have been effective in increasing the age of first sexual intercourse. To date, available evaluations are

too weak to provide evidence for or against the ability of abstinence-only programs to help adolescents delay the onset of sexual activity.

One example of the abstinence-only approach is Success Express, an abstinence-only, school-based program for sixth through eighth graders. This program used a curriculum focusing on family values and self-esteem, pubertal development and reproduction, communication strategies and interpersonal skills about "how to say no," examination of future goals, the effects of peer and media pressures, and complications of premarital sexual activity, adolescent pregnancy, and STDs. Although the evaluation was carefully developed by using a quasi-experimental design, post-test data were gathered immediately following the 6-week intervention; no follow-up data were collected at a later point. It is not surprising that such short-term results showed no significant difference in timing of first sexual intercourse between the intervention and control groups (Christopher and Roosa, 1990; Roosa and Christopher, 1990). The only significant finding was that boys in the intervention group were more likely to participate in precoital sexual behaviors than were boys in the comparison group.

Another abstinence-only, school-based program, Project Taking Charge, combined sex education and vocational training for low-income seventh-grade students. The program was designed to promote abstinence from sexual activity through promotion of communication between adolescents and their parents and planning for the future in the world of work. Basic sexual anatomy and sexual development were taught, but contraception was not a part of the curriculum. At both 6 weeks' and 6 months' post-intervention, the evaluation found no significant

differences in the sexual behaviors of the intervention and comparison groups, although the results indicated that students in the intervention group may have delayed the initiation of sexual intercourse. However, the small sample size limits the generalizability of the results (Jorgensen, 1991; Jorgensen et al., 1993).

A home-based abstinence-only program, Facts and Feelings, distributed a videotape designed to encourage parents and their seventh and eighth graders to discuss sexual issues before the youths' initiation of sexual intercourse. The objective of the program was to encourage discussion about sexual issues between the parents and the adolescent, and the long-term goal was to reduce early adolescent sexual behavior. The videotape promoted abstinence and did not include contraceptive information. At the 1-year follow-up, similar rates of adolescent sexual activity were found in the intervention and control groups (Miller et al., 1993).

In the aggregate, the evaluations of programs that encourage abstinence only (with no additional material on contraception) provide insufficient evidence to determine if the programs delayed the initiation of sexual intercourse or reduced the frequency of intercourse. More research is needed to understand the impact of these programs more precisely.

3. Sexuality education programs that provide information on both abstinence and contraceptive use neither encourage the onset of sexual intercourse nor increase the frequency of intercourse among adolescents. In fact, programs that provide both messages appear to be effective in delaying the onset of sexual intercourse and encouraging contraceptive use once sexual activity has begun, especially among younger adolescents.

Concern has been expressed that sexuality education leads to earlier sexual intercourse. Ten of the 23 evaluated programs were sexuality education programs that taught students about the benefits of abstinence for young adolescents as well as the benefits of contraceptive use once sexual activity had begun. All of these programs reported that the onset of sexual intercourse was not higher for the intervention group, nor was the frequency of intercourse higher for the intervention group. In fact, 7 of the 10 intervention programs had outcomes that can decrease the risk of pregnancy, such as raising the age of onset of sexual intercourse, decreasing the mean number of acts of sexual intercourse, and increasing contraceptive use among those students who were already sexually active. The remaining three programs had mixed results, but in no instance was the onset of sexual intercourse earlier for the intervention groups.

Although these programs have been criticized for sending confusing messages about sexual behavior to adolescents ("don't do it, but if you do, protect yourself"), program evaluations indicate that adolescents do not have difficulty absorbing this two-part message or sorting through the information to find the material most relevant to their own situations. In addition, a recent worldwide literature review concludes that there is no support for the notion that sexuality education encourages the initiation of sexual intercourse or increased sexual activity. Even in the face of different methodologies and study locales, the aggregate effect of sexuality education is in the direction of postponing first sexual intercourse and using contraception more effectively (Grunseit and Kippax, undated).

One of the best known evaluated programs in the United States that explicitly includes information on both abstinence and contraceptive use is Postponing Sexual Involvement: An

Education Series for Young Teens. This program includes two components: one on postponing sexual involvement and one on human sexuality. The first component emphasizes that abstinence is the best choice for young adolescents, and the second component provides basic information on reproduction and contraception. This combination has been shown to be effective: fewer members of the intervention group than those not offered the combined course initiated sexual intercourse, and contraceptive use was higher among sexually active students in the intervention group than in the comparison group.

The Reducing the Risk program also illustrates the effectiveness of the dual message. This curriculum was based on several interrelated theoretical approaches and explicitly emphasized that adolescents should avoid unprotected intercourse, either through abstinence or by using contraception. Results indicated that significantly fewer students in the intervention group than in the comparison group became sexually active. Of the students who did report being sexually active, significantly fewer reported the practice of unprotected sex, either by delaying first intercourse or by increasing contraceptive use.

Not all programs offering dual messages have had such clear success, however. For example, Teen Talk, a school-based program that uses small group discussions as a key feature, had mixed results. The curriculum was designed to make adolescents aware of the seriousness of adolescent pregnancy and the probabilities of such a pregnancy happening to them, as well as the benefits of and barriers to abstinence and contraceptive use. The evaluation revealed that young men in the intervention group were significantly more likely to have

abstained from sex than were young men in the control group. Young women in the intervention group, on the other hand, were no less likely to begin sexual activity than young women in the control group, and furthermore, among the participants who became sexually active following the program, the women in the control group were significantly more likely to have used contraception at last intercourse than those in the intervention group.

Sexuality education in school-based settings was considered carefully in a comprehensive review by Kirby and colleagues (1994). The researchers identified studies of school-based sexuality education and HIV-AIDS education programs and summarized the results; although they looked at a slightly different program universe than the 23 programs reviewed here, the overlap is considerable. Consistent with the analysis presented in this chapter, they learned that none of the programs that discussed both abstinence and contraception significantly hastened the onset of intercourse. Nor did the programs change the frequency of intercourse among those students who were sexually experienced prior to receiving the curriculum. Some programs also increased contraceptive use among students who were sexually inexperienced at the onset of the program. They conclude that, overall, effective programs:

- focus specifically on reducing sexual risk-taking behaviors that might lead to unintended pregnancy or HIV or STD infection;
- use social learning theories as a foundation for program development;
- provide basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse through experiential activities designed to

personalize this information;

• include activities that address social or media influences on sexual behaviors;

• reinforce clear and appropriate standards to strengthen individual values and group norms against unprotected sex;

• provide modeling and practice of communication and negotiation skills; and

• provide training for program implementation.

Recently, Wilcox and colleagues (1996) reviewed a more specialized universe of abstinence programs -- those funded by the federal government through Title XX of the Public Health Service Act, the so-called Adolescent Family Life Act. This legislation was based on the firm belief that the best way to prevent pregnancy and STDs among teens is to promote total abstinence as the only approach, and that companion education about contraception gives mixed message to kids by tacitly accepting the possibility of their being sexually active. The authors concluded:

> Under the Adolescent Family Life Act, the federal government has spent millions of dollars to support abstinence-only sex education. Evaluators of many of the funded programs have concluded that the curricula are effective in promoting attitudes of sexual abstinence and in decreasing sexual activity among teens. Our review of a set of these evaluations suggests that these claims are unwarranted. We are aware of no methodologically sound studies that demonstrate the effective ness of curricula that teach abstinence as the only effective means of preventing teen pregnancy. Instead, the best

evaluations of abstinence-only programs find no cause for optimism. None of the best studies found positive changes in behavioral variables such as rates of sexual activity, pregnancies, or STDs. The few attitudinal changes found in two of the evaluations disappeared within a few months of the programs' ending. Credible evidence is lacking to show the effectiveness of abstinence-only programs. Additionally, there is mounting evidence suggesting that these programs are generally ineffective.

So, where are we? First, the abstinence-plus approach appears to delay first intercourse and increase effective contraceptive use once sexual activity has begun. Second, we are not sure whether many abstinence-only programs are successful in rasing the age of first intercourse, and most of the evidence suggests they are not. Put another way, because of poorly done research, many programs are of unknown value, and some have been shown to be ineffective.

Although many would like to focus on part two of this message -- that some abstinence-only programs have been shown to be *ineffective*, I'd like to focus on part one -- that in many instances we don't know one way or the other. Why is it, after all these years of innovation and experimentation by deeply caring individuals who believe in the merit of their work, that we know so little -- not just about abstinence-only programs, but about pregnancy prevention programs generally?

As detailed in the IOM report, there are at least three reasons we have poor program evaluation: (1) cost, (2) methodological difficulties, and (3) a social environment in which research on fertility-related topics may be seen as controversial.

With regard to cost, methodologically rigorous evaluations that incorporate random assignment or the development of a comparison group can be expensive; for example, it is often necessary to hire outside evaluators, especially for smaller programs with limited staff. Few programs have the additional funding readily available in their budgets for such an undertaking, and program staff may be reluctant to spend program dollars on research evaluations that would not immediately translate into the ability to provide more or higher-quality service. In some cases, evaluations are mandated by federal or state legislation, but additional funding is often not provided for in the legislation or is budgeted on an unrealistically low level. This leaves the option of using funds designated for program service, much to the distress of program staff. Sometimes additional funds for evaluation can be raised from, for example, local foundations, but success with such an approach is often limited. This perennial problem in finding or being provided with adequate evaluation financing sets the stage for a particularly distressing sequence of events: a program is put in place without adequate funds for evaluation, and then when it is unable to prove its effectiveness, it is criticized for not knowing what impact it has had.

As for research methods, most programs target only a small number of people, generally a convenience sample such as students in a classroom or teen mothers receiving public support in a community program. The sample size is usually limited, and often there is a selection bias toward people who want to participate in the program. Small sample size makes it difficult to detect statistically significant differences between intervention and comparison groups. And comparison groups can be difficult to select, in some cases because clinically oriented programs often provide

basic health services that might be unethical to withhold. Determining the intervention "dosage," or amount of time spent in a program, is also challenging and must be carefully tracked, because some participants attend all segments of the program and some attend only a few. Similarly, the fact that pregnancy prevention programs often consist of many components makes it difficult to assess the relative effectiveness of each component. It may be that no single component is the most effective piece, but rather that it is the combination of components that is effective. In addition, longitudinal follow-up of participants is difficult in general, but is particularly challenging in reproductive health programs because of confidentiality issues.

Another problem faced in many program evaluations is that outcome measures are limited to self-reported sexual activity and contraceptive use. Such reports may be unreliable, but there are often no alternative outcome measures available, save the most conspicuous consequences such as sexually transmitted diseases (STDs) and pregnancy. Even these obvious outcome measures can be difficult to assess precisely. For example, although births can be verified through the vital registration system, there is no universal system for reporting abortions or miscarriages, a fact that leads, among other things, to chronic problems in documenting the actual number of abortions performed annually in the United States.

These considerations argue in favor of evaluating only a few large, multi-site, model programs relying on experienced evaluators having resources sufficient for the task. Some have suggested that individual programs should focus attention on process evaluation (i.e., the careful collection of data on client characteristics and service utilization) and that third parties should

undertake well-funded impact evaluations (i.e., outcomes and long-term follow-up) of various program models that target different subpopulations.

And finally, there is the problem of the general social environment. The past 10 or 15 years have not been hospitable to research that might be seen as sex-related and therefore controversial. For example, very little survey and ethnographic research on sexuality has been done in the past two decades. Not only is it controversial politically to conduct research on sex-related issues, but involving adolescents in such research, particularly without parental consent, can raise legal issues as well.

During the 1980s especially, the federal government severely curtailed systems of data collection that had been used to monitor a wide variety of programs related to fertility, such as the national family planning reporting system. The view seemed to be that because such programs were seen by some public officials as objectionable, it was best to down play or ignore them altogether by, among other things, collecting little information on their activities or effects. Thus, the fact that only 23 programs met the IOM's evaluation criteria may reflect more the political climate within which pregnancy-related programs have recently operated than a disinclination among program leaders to evaluate their activities. In addition, during the 1980s, the withdrawal of much federal funding from all but abstinence-only programs may have had a chilling effect on program directors and researchers who might otherwise have been inclined to evaluate their programs.

If we want to move ahead in understanding how to do effective education for abstinence -- or effective sex ed generally, we are going to have to address three of these hurdles. Specifically:

1. Public and private sector funders will need to invest substantially more money in program evaluation. For example, the notion that a modest 5% set-aside for program evaluation can answer the tough questions about impact is naive. Sometimes as much must be spent on evaluation as on the actual program. It may seem a bitter pill to swallow, but if we fail to make adequate investments in research, we will be here again in five years bemoaning the limited information available about how to improve matters.

2. Researchers and program leaders alike need to adhere to strong standards of experimental design, with particular attention to addressing the pervasive problem of self-selection bias. Findings must be submitted to peer review and published as widely as possible; in particular, we need to hear more about what has been tried that didn't work out, and why that might be.

3. All of us need to help convince policy makers at all levels that their timidity about research in this area is ultimately self-defeating. The only way we will know, for example, if a particular abstinence-program delays first intercourse will be to ask kids about that event before and after the intervention. If we can't ask, we are unable to develop effective interventions, whatever their makeup.

With progress on all three fronts, several years from now we may well have a few

programs or curricula from the "abstinence-only" approach that have been shown to raise the age of first intercourse; we'd probably have some more abstinence-plus approaches as well. If so, communities will then have a greater range of options to choose from as they confront the challenge of pregnancy and STDs. As I alluded to earlier, this is a big and complicated country, and communities vary enormously in their preferences and their values. If we are serious about improving the lives of adolescents, we must be able to offer a variety of effective programs. Some may be abstinence-based; some may be abstinence-only; some may even be youth development programs that deal very little with the mechanics of pregnancy prevention but instead help to create the basic motivation to avoid pregnancy in the first place.

I conclude with one question and one comment. First the question. Several data sets now document that an appreciable portion of young teenage girls who give birth -- perhaps as high as 60% -- were themselves sexually abused in their girlhood. For these young women, the notion of taking control of ones sexuality -- of saying no, of remaining pure, of rejecting inappropriate and unwanted sexual advances -- seems a hollow message that fails to understand their history, their fears, and their great vulnerability. What is the connection between abstinence and these young women? How do we encourage abstinence when the abusive uncle lurks just around the corner?

My comment is simply that we be very modest in our expectations about any of the programs we have been discussing, whether they are abstinence-only or abstinence-plus. Teen pregnancy, the spread of AIDS and STDs – teen sexual activity generally -- have many antecedents and explanations. We would be foolish to think that small community- or school-

based programs in isolation would be able to make major inroads in these areas. Most have very small budgets and therefore limited staff. Many programs count their efforts in hours -- five hours of such and such material in a classroom, for example, or two sessions on successive Saturdays. How can these efforts compete with a media culture that saturates hours of every single day in an adolescent's life with messages that are typically in direct opposition to all of our curricula? How can we expect a small program to be an equal match for movies in which everyone is sexually active and unmarried and no one seems the worse for wear? The answer, I think, points us to working as much at the cultural and institutional level of our nation as we do at the small program level. Or, as we sometimes say at the National Campaign to Prevent Teen Pregnancy, for every hour you spend working one-on-one with an at-risk young person, spend an hour also on changing the public conversation and culture in complimentary ways.

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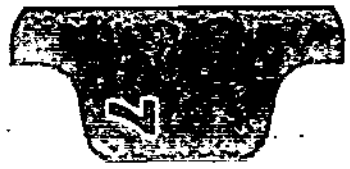

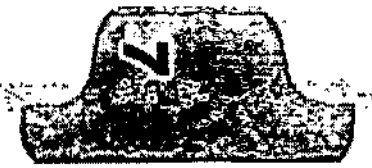

Welfare Reform Resource Packet
Section VII

The National Campaign to Prevent Teen Pregnancy
March 1997

A National Strategy to Prevent Teen Pregnancy

U.S. Department of Health
and Human Services

January 1997

A National Strategy to Prevent Teen Pregnancy

Despite the recent decline in the teen birth rate, teen pregnancy remains a significant problem in this country. Most teen pregnancies are unintended. Each year, about 200,000 teens aged 17 and younger have children. Their babies are often low birth weight and have disproportionately high infant mortality rates. They are also far more likely to be poor. About 80 percent of the children born to unmarried teenagers who dropped out of high school are poor. In contrast, just 8 percent of children born to married high school graduates aged 20 or older are poor.

The U.S. Department of Health and Human Services (HHS) has responded to a call from the President and Congress for a national strategy to prevent out-of-wedlock teen pregnancies and to a directive, under the new welfare law, to assure that at least 25 percent of communities in this country have teen pregnancy prevention programs in place.

Building on our previous work in this area, our national strategy is designed to:

I. Strengthen the national response to prevent out-of-wedlock teen pregnancies.

II. Support and encourage adolescents to remain abstinent.

Our national strategy will build on existing public and private-sector efforts and on initiatives in the new welfare law by helping to provide the tools needed to develop more strategic and targeted approaches to preventing out-of-wedlock teen pregnancies. It will strengthen ongoing efforts across the nation by increasing opportunities through welfare reform; supporting promising approaches; building partnerships; improving data collection, research, and evaluation; and disseminating information on innovative and effective practices.

This strategy will also send the strongest possible message to teens that postponing sexual activity, staying in school, and preparing for work are the right things to do. In particular, our new Girl Power! public education campaign will engage the Department's teen pregnancy prevention programs in efforts to promote abstinence among 9- to 14-year-old girls.

KEY PRINCIPLES

As we move forward in implementing the national strategy, we will adhere to and promote the five principles that research and experience tell us are key to promising community efforts:

Parental and Adult Involvement: Parents and other adult mentors must play key roles in encouraging young people to avoid early pregnancy and to stay in school.

Abstinence: Abstinence and personal responsibility must be primary messages of prevention programs.

Clear Strategies for the Future: Young people must be given clear connections and pathways to college or jobs that give them hope and a reason to stay in school and avoid pregnancy.

Community Involvement: Public and private sector partners throughout communities, including parents, schools, business, media, health and human services providers, and religious organizations, must work together to develop comprehensive strategies.

Sustained Commitment: Real success requires a sustained commitment to the young person over a long period of time.

THE NATIONAL STRATEGY

I. Strengthen The National Response To Prevent Out-Of-Wedlock Teen Pregnancies

Teen pregnancy is a problem that impacts nearly every community. The responsibility to solve this problem lies with all of us, including families, communities, and young people themselves. In calling for a national strategy, Congress has recognized the critical importance of assuring that every community, large or small, urban or rural, is working to find solutions to this problem.

As part of the national strategy, we will use new resources to strengthen, integrate, and support additional teen pregnancy prevention and other youth-related activities in communities across the country. Further, we will work with our partners to identify additional promising efforts and disseminate information about them to other communities.

A. Increase Opportunities Through Welfare Reform

The welfare law signed by President Clinton on August 22, 1996 calls for additional efforts to prevent out-of-wedlock teenage pregnancies and to assure that communities engage in local efforts to prevent teenage pregnancy. These additional efforts are a critical component of our national strategy. As President Clinton has said, "Nobody should get pregnant or father a child who isn't prepared to raise the child, love the child, and take responsibility for the child's future." HHS will work with the states to provide guidance, to capture lessons learned from these welfare reform initiatives, to identify successful and innovative strategies, and to disseminate that information to all interested parties.

Personal Responsibility for Minor Parents. Under the new welfare law, unmarried minor parents will be required to stay in school and live at home, or in an adult-supervised setting, in order to receive assistance. The law also supports the creation of Second Chance Homes for teen parents and their children who might be at risk of abuse if they remained in their own homes. Second Chance Homes are expected to provide teen parents with the skills they need to become good role models and providers for their children, giving them guidance in parenting, child development, family budgeting, and proper health and nutrition, and in avoiding repeat pregnancies.

Abstinence Education. The new welfare law provides $50 million a year in new funding for state abstinence education activities, beginning in FY 1998. States will be able to target these funds to high-risk groups, such as teenage boys and girls most likely to have children out-of-wedlock. These new funds will be available through the Maternal and Child Health Block Grant.

Incentives for States. Under the new welfare law, 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 Toughest Possible Child Support Enforcement. Through tougher child support enforcement we will send the strongest possible message to young girls and boys that parenthood brings responsibilities and obligations and that they should not have children until they are ready to provide for them. The new welfare law includes the child support enforcement measures President Clinton proposed in 1994 – the most sweeping crackdown on non-paying parents in history. The new measures include: streamlined efforts to name the father in every case; employer reporting of new hires to locate non-paying parents who move from job to job; uniform interstate child support laws; computerized state-wide collections to speed up payments; and tough new penalties, like drivers' license revocation, for parents who fail to pay.

B. Support Promising Approaches

HHS-supported programs that include teen pregnancy prevention are just a part of the myriad and diverse teen pregnancy prevention efforts located in communities across the country. However, HHS plays an important leadership role in sponsoring innovative and promising strategies tailored to the unique needs of individual communities. Excluding HHS-funded programs that reach communities through states (e.g., Medicaid and the Maternal and Child Health Block Grant), HHS-supported programs that include teen pregnancy prevention reach an estimated 30 percent of communities in the United States. This represents about 1,410 communities across the country that receive funding from HHS. (See Appendix I: HHS Activities for overview of HHS teen pregnancy prevention activities and the methodology used to develop this estimate).

The five principles of promising strategies described above are reflected in the teen pregnancy prevention programs HHS supports, including the key demonstration programs of the Centers for Disease Control and Prevention (CDC) and the Office of Population Affairs (OPA). Additional funding for these programs in FY 1997 will enable communities across the country to expand their teen pregnancy prevention efforts.

The Community Coalition Partnership Program for the Prevention of Teen Pregnancy is one of HHS's most comprehensive and innovative teen pregnancy prevention programs. The CDC launched the program in 1995 by awarding grants to 13 communities with high rates of teen pregnancy located in 11 states. The funds have been used to strengthen existing community-wide coalitions and to develop community action plans. The next phase begins in FY 1997 when a total of $13.7 million is available to help the 13 community coalition partnerships implement their action plans and evaluate their impact, as well as to support related data collection, evaluation, and dissemination activities.

The Adolescent Family Life Program (AFL), created in 1981, supports demonstration projects, approximately one-third of which currently provide abstinence-focused educational services to prevent early unintended pregnancies, sexually transmitted diseases, and HIV/AIDS. Most projects provide comprehensive and innovative health, education, and social services to pregnant and parenting adolescents, their infants, male partners, and their families, with a major emphasis on preventing repeat pregnancies among adolescents. In FY 1996, the AFL program funded 17 projects in 14 states, which will be continued in FY 1997. An additional $7.6 million in new funding will be used to enable smaller communities to develop and implement about 40 abstinence-based education programs and about 60 larger prevention demonstration projects, following the abstinence education definition in the welfare law.

C. Build Partnerships

Building partnerships among all concerned citizens is essential to preventing teen pregnancy, which President Clinton has described as "our most serious social problem." Tackling this problem will require a comprehensive, focused, and sustained effort from all sectors of society. Therefore, HHS will initiate a broad partnership-building process to implement the national strategy and to solicit nationwide commitment and involvement in the goal of preventing out-of-wedlock teen pregnancies. The feedback from this process will allow us to refine the national strategy as well as to improve our ongoing efforts. By building partnerships among national, state, and local organizations; schools; health and social services; businesses; religious institutions; federal, state and local governments; tribes and tribal organizations; parents; and adolescents, we will be able to unite in our efforts to send a strong message of abstinence and personal responsibility to young people and to provide them with opportunities for the future.

An important partner in this effort will be the National Campaign to Prevent Teen Pregnancy. In his January 1995 State of the Union Address, President Clinton challenged "parents and leaders all across this country to join together in a national campaign against teen pregnancy to make a difference." A group of prominent Americans responded to that challenge, forming the National Campaign to Prevent Teen Pregnancy ("Campaign"). The President has pledged the help of the Executive Branch in this non-partisan, private-sector effort.

The mission of the Campaign is to prevent teen pregnancy by supporting the values and stimulating actions that are consistent with a pregnancy-free adolescence. The Campaign is designed to support the efforts of local communities and to make sure that local community efforts are based on research about what works. The Campaign is helping to build partnerships with the media, the business sector, and others, and HHS looks forward to working with the Campaign in implementing the national strategy.

The strategy will also include a partnership effort with federal, state, and community organizations that work on behalf of teenagers with disabilities. Teens with learning disabilities, mental retardation, mental illness, and physical disabilities present a unique set of challenges in preventing out-of-wedlock pregnancies. Mainstream programs can be highly effective, but the unique characteristics of teenagers with disabilities also must be taken into account in developing and implementing these programs. As part of the national strategy, HHS will work to address the special challenges in preventing out-of-wedlock teen pregnancies among young men and women with disabilities. The strategy will address issues such as program access, the need for targeted materials, and opportunities for education and skills-building to give teens with disabilities a positive future and a better chance of avoiding teen pregnancy.

D. Improve Data Collection, Research, and Evaluation

Data collection, research, and evaluation are all critical for contributing to our understanding of the magnitude, trends, and causes of teen pregnancies and births; for developing targeted teen pregnancy prevention strategies; and for assessing how well these strategies work, whether on a local, state, or national level. As part of the national strategy, HHS will work to strengthen each of these important activities.

Data Collection and Surveillance. National statistics on teen birth patterns, including state-by-state data, are now available nearly a full year earlier than in prior years, a result of a more timely approach to collecting, compiling, and publishing vital statistics data. The new system builds on advances in computer and communications technology as well as the CDC's National Center for Health Statistics' (NCHS) long-standing collaboration with state vital statistics offices. Preliminary teen birth rates from the new system for 1995 were published in October 1996 and future statistics will be reported semiannually. (See Appendix II: Teen Birth Data). The CDC also provides consultation to states and local areas to enable them to compute estimates of teen pregnancy and other related indicators.

The upcoming release in 1997 of the new National Longitudinal Study of Adolescent Health (Add HEALTH), a comprehensive study of adolescent health funded by HHS' National Institute of Child Health and Human Development (NICHD) and other HHS agencies, will provide an opportunity to increase our knowledge about risky behaviors and resiliency factors in adolescents and about environmental influences, including parents, siblings, peers, schools, neighborhoods, and communities. The National Survey of Adolescent Males, supported by NICHD, OPA, and other HHS agencies, and the 1995 cycle of the National Survey of Family Growth, conducted by NCHS with other HHS support, will also provide relevant information on the behavior of young men and women.

Research and Evaluation. While promising approaches to reduce teenage pregnancy have been identified, a comprehensive review of teen pregnancy programs funded by HHS and conducted by Child Trends, Inc. indicates that most interventions have not been rigorously evaluated to assess their impact or to identify the components that contribute to program success or failure. Using our demonstration programs, we will work with our partners to increase our understanding of what works and what does not. For example, the CDC's Community Coalition Partnership Program for the Prevention of Teen Pregnancy is helping each community to incorporate evaluation into its teen pregnancy prevention strategy. In addition, the National Institutes of Health is sponsoring research on interventions to prevent teen pregnancy.

The Child Trends report also indicates that further research is needed in a number of areas of normal adolescent development, including why certain adolescents engage in high-risk behaviors, why some adolescents are able to negotiate safely to adulthood, and what factors influence adolescent sexual behavior, including media influences and cultural norms. In addition to its own research studies and demonstration projects, HHS will provide information from its new survey data, (e.g., Add HEALTH), to help researchers answer these questions.

E. Disseminate Information on Innovative and Effective Practices

Sharing information about promising and successful approaches is critical to the replication and expansion of teen pregnancy prevention efforts across the country. Policy makers, program administrators, tax payers, media producers, community leaders, parents, and adolescents all need to know about the approaches most likely to be successful in preventing teen pregnancy.

HHS will continue to work with its partners to highlight innovative practices at the federal, state, and local levels and to disseminate new research and evaluation findings. For example, at a White House press conference in June, HHS released "Preventing Teen Pregnancy: Promoting Promising Strategies: A Guide for Communities" highlighting five teen pregnancy programs that evaluation shows to be promising. (See Appendix III: Promising Strategies). Ongoing efforts include outreach to 105 Empowerment Zones and Enterprise Communities to encourage and help them to include teenage pregnancy prevention in their community development strategies. The Department will also disseminate new information on the developmental needs of youth and on the use of broad-based activities to help teenagers avoid risky behaviors leading to teen pregnancy. In addition, HHS currently supports a variety of resource centers, clearinghouses, and toll-free hotlines at both the state and national level that provide information and technical assistance to state and community-based health, social service, and youth-serving agencies. (See Appendix IV: Program Contacts and Other Resources).

II. Support and Encourage Adolescents to Remain Abstinent

To reach adolescent populations at risk for premature sexual activity and pregnancy, we must develop comprehensive efforts specifically tailored to the unique needs, interests, and challenges of each group, including targeted messages that work. Although the national strategy must send the strongest possible message to all teens that postponing sexual activity, staying in school, and preparing to work are the right things to do, the research shows that girls and boys experience some aspects of early adolescence in different ways, because they encounter different social, cultural, physiological and psychological challenges. Therefore, different approaches will be required to meet the unique needs of different adolescent populations, including disabled teens who are at increased risk of pregnancy. As a result, an important component of the national strategy will be to determine the best ways to reach different groups of young boys and girls.

The national strategy will place a special emphasis on encouraging abstinence among 9- to 14-year-old girls. The research tells us that this a critical age for reinforcing self confidence and positive values and attitudes among girls. In 1997, HHS will use its new Girl Power! campaign to address premature sexual activity among girls aged 9-14, promoting a strong abstinence message. The Girl Power! campaign, launched in November, 1996, is a multi-phased, national public education campaign designed to galvanize parents, schools, communities, religious organizations, health care providers, and other caring adults to make regular sustained efforts to reinforce girls' self-confidence, by providing them with positive messages, meaningful opportunities, and accurate information on a variety of key health issues. The Girl Power! abstinence education initiative includes: engaging all HHS teen pregnancy prevention and related youth programs in sustained efforts to promote abstinence among 9- to 14-year-old girls, and developing and implementing a national media campaign to involve parents and caring adults in sending a strong abstinence message across the country.

The national strategy will also focus on boys and young men. Significantly less is known about the decision-making behavior of boys around motivations for abstinence, sexual activity, and fatherhood. Through the national strategy, HHS will increase our understanding of these factors and work to develop effective prevention strategies, particularly those promoting abstinence, for boys. These efforts will include working with the Administration's Fatherhood Initiative to ensure that men, including pre-teen and teenage boys, receive the education and support necessary to postpone fatherhood until they are emotionally and financially capable of supporting children. The strategy will also build on existing Departmental efforts, such as the Title X Family Planning Adolescent Male Initiative and other Title X-funded projects to support male-oriented community-based organizations in promoting responsible behavior among teenage boys.

Finally, the Department will work with national youth-serving organizations to use their networks to promote activities that encourage abstinence among girls and boys. With their important efforts in stimulating parental and community involvement, these programs will help provide the sustained commitment necessary to help prevent teen pregnancy.

APPENDIX I: HHS ACTIVITIES

The Department of Health and Human Services supports a variety of efforts to help communities develop comprehensive teen pregnancy prevention strategies that reflect five principles: parental and adult involvement, abstinence, clear strategies for the future, community involvement, and a sustained commitment. We estimate that, through our support, at least 30 percent of communities across the country already have teen pregnancy prevention programs in place. This estimate will differ from a simple count of the number of communities served by the following programs due to overlapping sites and other factors (see note below for methodology). Our national strategy will build upon, strengthen, and expand the most promising efforts to assure that every community in the country is working to prevent out-of-wedlock teen pregnancies.

HHS Programs

- **The Community Coalition Partnership Program for the Prevention of Teen Pregnancy** is one of HHS's most comprehensive and innovative teen pregnancy prevention programs. In 1995, the Centers for Disease Control and Prevention awarded grants to community-wide coalitions in communities with high rates of teen pregnancy. CDC awarded approximately $250,000 per year for two years to 13 communities in 11 states to help these communities mobilize and organize their resources to support effective and sustainable teen pregnancy prevention programs. The next phase begins in FY 1997 when a total of $13.7 million is available to help the 13 community coalition partnerships implement their action plans and evaluate their impact, as well as to support related data collection, evaluation, and dissemination activities.

- **The Adolescent Family Life Program (AFL)**, created in 1981, supports demonstration projects, approximately one-third of which currently provide abstinence-focused educational services to prevent early unintended pregnancies, sexually transmitted diseases, and HIV/AIDS. Most projects provide comprehensive and innovative health, education, and social services to pregnant and parenting adolescents, their infants, male partners, and their families, with a major emphasis on preventing repeat pregnancies among adolescents. In FY 1996, the AFL program funded 17 projects in 14 states, which will be continued in FY 1997. An additional $7.6 million in new funding will be used to enable smaller communities to develop and implement about 40 abstinence-based education programs and about 60 larger prevention demonstration projects, following the abstinence education definition in the welfare law.

- **Reproductive Health and Family Planning Services** (under Title X of the Public Health Service Act) are provided to nearly 5 million persons each year, nearly one third of whom are under 20 years of age. Abstinence counseling and education are an important part of the Title X service protocol for adolescent clients. To address male involvement in preventing unintended pregnancy, the Title X Family Planning Program will supplement existing community-based programs to develop effective approaches for providing family planning education and services to males.

- **Healthy Schools, Healthy Communities,** a Health Resources and Services Administration program created in 1994, has established school-based health centers in 27 communities in 20 states and the District of Columbia to serve the health and education needs of children and youth at high risk for poor health, teenage pregnancy, and other problems.

- **The Social Services Block Grant (SSBG)** (under Title XX of the Social Security Act) provides funding to prevent, reduce, or eliminate dependency; achieve or maintain self-sufficiency; prevent neglect, abuse, or exploitation of children and adults; prevent or reduce inappropriate institutional care; and provide admission or referral for institutional care when other forms of care are inappropriate. SSBG Grants are made directly to the 50 states, the District of Columbia, and Puerto Rico, Guam, the Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands to fund social services tailored to meet the needs of individuals and families residing within that jurisdiction.

- **The Community Services Block Grant,** which operates in all 50 states, the District of Columbia, and the territories, enables local community agencies to provide low-income populations, including youth at risk, with job counseling, summer youth employment, GED instruction, crisis hotlines, information and referral to health care, and other services.

- **The Independent Living Program,** run by the Administration for Children and Families, provides funds to states to support activities ranging from educational programs to programs that help young people who are making the transition from foster care to independent living to avoid early parenthood. This program supports activities in all 50 states and the District of Columbia.

- **Youth Programs** including Runaway and Homeless Youth Programs, Transitional Living Programs, and the Youth Sports Program, address a wide range of risk factors for teen pregnancy. Together, these programs operate in 620 communities in 50 states and the District of Columbia.

- **The Community Schools Program** was created by the 1994 Violent Crime Control and Law Enforcement Act to support activities during non-school hours for youth in high-risk communities. Funds are awarded to public-private partnerships of community-based organizations to provide a broad spectrum of supervised extracurricular and academic programs after-school and during evenings, weekends and school vacations. Grantees also train teachers, administrators, social workers, guidance counselors, and parent and school volunteers to provide concurrent social services for at-risk students. The Administration for Children and Families awarded $10.15 million in grants to 54 communities in 1997 under this program.

- **Healthy Start** has 22 demonstration projects operating in 25 states (one project operates in three states) to reduce infant mortality in the highest-risk areas and to improve the health and well-being of women, infants, and their families. Among a broad array of services provided, thousands of teenagers participate in prevention programs exclusively designed for adolescents that encourage healthy lifestyles, youth empowerment, sexual responsibility, conflict resolution, goal setting, and the enhancement of self-esteem.

- **Maternal and Child Health Services Block Grant** (Title V) funds support a variety of adolescent pregnancy prevention activities in 59 states and jurisdictions that include adolescent pregnancy prevention programs, state adolescent health coordinators, state prenatal hotlines, family planning, technical assistance, and other prevention services. Approximately 85 percent of the block grant funds are distributed under a formula which requires a match by the states. More than $1 billion is generated under this federal-state partnership. Through the block grants, approximately 610 school-based and school-linked centers are supported. In addition, the Maternal and Child Health Bureau administers a program of discretionary grants using 15 percent of the Block Grant appropriation. In FY 1995-96, the Bureau awarded approximately 144 discretionary grants to support adolescent health programs each of which impacts directly or indirectly on the problems of teen pregnancy.

- **Empowerment Zones and Enterprise Communities** in 105 rural and urban areas in 43 states and the District of Columbia have been awarded grants to stimulate economic and human development and to coordinate and expand support services. As they implement their strategic plans, some sites are including a focus on teenage pregnancy prevention and youth development.

- **Health education in schools** supports the efforts of every state and territorial education agency to implement school health programs to prevent the spread of HIV and sexually transmitted diseases (STDs). Assistance is also provided to 13 states to build an infrastructure for school health programs. Efforts are targeted at preventing early sexual activity, STDs, HIV, drug and alcohol abuse, tobacco use, and injuries.

- **Community and migrant health centers**, including family and neighborhood health centers, operate in 1,647 sites in 643 communities in all 50 states, the District of Columbia, and six territories. The centers provide primary and specialized health and related services to medically-underserved adolescents. Some centers include special hours or clinics for adolescent patients.

- **Indian Health Service (IHS)** provides a full range of medical services for American Indians and Alaska Natives. IHS supports projects targeted at preventing teenage pregnancy, and its prevention and treatment programs also have a special emphasis on youth substance abuse, child abuse, and women's health care.

- **Drug treatment and prevention programs** include services to prevent first time and repeat pregnancies among teenagers. One hundred twenty-two residential substance abuse treatment programs for pregnant and postpartum women, as well as women with dependent children, receive support to provide family planning, education, and counseling services in 39 States, the District of Columbia, and the Virgin Islands. Also, 25 programs to prevent substance use and other adverse life outcomes serve high-risk female teens in 13 States and the District of Columbia.

- **Health Care and Promotion** under Medicaid provides Medicaid-eligible adolescents under age 21 with access to a comprehensive range of preventive, primary, and specialty services within its Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program.

- **The Medicaid program** also funds family planning services at an enhanced match rate for states. The federal government pays 90 percent of state expenditures for Medicaid family planning services, while the state funds the remaining 10 percent. The enhanced match encourages states to fund family planning programs which include patient counseling and education concerning pregnancy prevention and reproductive health.

Evaluation and Research

HHS has conducted research, surveillance, demonstrations, and evaluations on an ongoing basis to gather and provide information and technical assistance on the magnitude, trends, and causes of teenage pregnancy and on prevention programs and approaches that work, including:

- "**Beginning Too Soon: Adolescent Sexual Behavior, Pregnancy, and Parenthood**" is a two-volume comprehensive review completed for HHS by Child Trends, Inc. in June, 1995 of the most recent literature on teen sexual behavior, pregnancy and parenthood and the effectiveness of teen pregnancy prevention programs.

- As part of its **Youth Risk Behavior Surveillance System**, CDC helps states monitor critical health risk behaviors among teenagers, including sexual risk behaviors that result in HIV infection, other STDs, and teen pregnancy. In 1995, 40 states and territories and 16 large cities collected comparable data.

- The upcoming release in 1997 of the new **National Longitudinal Study of Adolescent Health (Add HEALTH)**, a comprehensive study of adolescent health funded by HHS' National Institute of Child Health and Human Development (NICHD) of the National Institutes of Health and other HHS agencies, will provide an opportunity to increase our knowledge about risky behaviors and resiliency factors in adolescents and about environmental influences, including parents, siblings, peers, schools, neighborhoods, and communities. The **National Survey of Adolescent Males**, supported by NICHD, OPA and other HHS agencies, and the 1995 cycle of the **National Survey of Family Growth** conducted by NCHS with other HHS support, will also provide relevant information on the behavior of young men and women.

- National Institutes of Health also conducts research and evaluation studies of promising interventions, including the "Adolescent Pregnancy Prevention Program", "Preventing Problem Behavior Among Middle School Students" program, and the "Research on Sexually Transmitted Diseases, Violence, and Pregnancy Prevention" (RSVPP) project.

NOTE:

Measuring the Proportion of Communities with Teen Pregnancy Prevention Programs

Recent declines in the teen birth rate, and indications 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. Measuring all the factors that help adolescents postpone premature sexual activity and avoid pregnancy is difficult, however, since individual, family, and community characteristics are all influential. Nevertheless, measuring the proportion of communities that have at least one teen pregnancy prevention program in place (estimated by dividing the number of such communities by the number of communities in the United States) provides a rough sense of how many communities are responding to this problem with specific, targeted prevention efforts.

To develop a sound, albeit conservative, estimate of the proportion of communities with teen pregnancy prevention programs, the estimate includes only those programs supported by HHS. HHS-supported programs that include teen pregnancy prevention services as a component are diverse, ranging from comprehensive health and social services to substance abuse treatment and HIV prevention education. The number of teen pregnancy prevention programs funded by HHS includes those programs funded in FY 1995 (the latest year for which complete information on grants awarded is available).

To determine how many communities have at least one program, the location of each program was identified based on the site of the services provided and/or the location of the grant recipient. Any individual community with more than one program was counted only once. The estimate excludes HHS funding provided directly to states (e.g., Medicaid, Maternal and Child Health Block Grant) which states may use to fund activities in multiple communities.

Since there is no single standard definition for community in the United States, the estimate uses a definition of community based on areas identified by the Commerce Department's Bureau of the Census. This definition includes all incorporated places with a population of 10,000 individuals or more (2,673) and all counties where, excluding these incorporated places, the remaining population reaches 10,000 or more (2,079), for a total of 4,752 communities. Under this definition, for example, Montgomery County, Maryland would consist of four communities, including three incorporated places of 10,000 or more inhabitants (Gaithersburg, Rockville, and Takoma Park) and one community representing the balance of the county's population, which exceeds 10,000.

Using the above calculations, the resulting estimate of the proportion of communities in the United States with HHS-supported teen pregnancy prevention and related programs is at least 30 percent. This proportion represents about 1,410 communities across the country.

APPENDIX II: TEEN BIRTH DATA

In October 1996, the National Center for Health Statistics (NCHS) inaugurated a new statistical series designed to provide more timely release of national and state-level birth statistics (1). These data will provide state and local health officials with a timely first-look at trends in these important measures of their community's health status. NCHS will publish data from the new statistical series on a semi-annual basis. The next report will be issued in early spring of 1997, and will cover the period July 1995-July 1996.

The October release included births for 1995 and U.S. birth rates for teenagers 15-19 years old. The data covered "all races" and white, black, American Indian, Asian or Pacific Islander, and Hispanic subgroups. The October report also provided data on the percent of all births occurring to teenagers in each state, by race and Hispanic origin. Other state-level birth data available from the preliminary report include births to unmarried mothers, low birth weight, prenatal care beginning in the first trimester, and births by cesarean delivery.

After NCHS completes final processing of birth data for a given year, additional, more-detailed statistical tabulations can be produced. In December 1996, NCHS published a report of state-level birth rates for teenagers which is included in this appendix (2). The report includes data for teenage subgroups 15-19, 15-17, and 18-19 years, and by race and Hispanic origin of the mother. The report describes the recent declines in U.S. birth rates for teenagers and the extent to which rates in individual states have also declined. The December report focuses on the period 1990-94. NCHS expects to update this report with rates for 1995 in late spring of 1997.

Reports showing state-level data in conjunction with national statistics can be very useful for state and local public health and other officials as they monitor trends in their states and compare them with trends in neighboring states. In addition, the rates in NCHS' teen birth rate report can help to assess the extent to which programs to reduce teenage pregnancy are succeeding. To assist in the comparison of state-level data, the December report includes maps of teen birth rates, showing the various levels of the rates as well as the 1991-94 trend in the rates.

The authors also note that some of the differences in overall rates by state reflect differences in the composition of the teenage populations by race and Hispanic origin, since birth rates for Hispanic and black teenagers are more than double the rates for non-Hispanic white teenagers. To examine state variations while controlling for population differences in race and ethnicity, the report includes standardized birth rates for each state. The standardized rates for many states with high Hispanic or black populations are lower than the actual rates.

Note on Teen Pregnancy Data:

HHS has published national estimates of teenage pregnancy for the years 1976-92. National data on teen pregnancy are updated on a regular basis as soon as the required data on births and estimates for abortions and fetal losses can be assembled for a given year. National rates for 1993 and 1994 are expected to be available in 1997. State-level teen pregnancy statistics have been published for 1980 and 1990-92. Updates of state rates for 1993 and 1994 are anticipated for 1997.

(1) Rosenberg HM. Ventura SJ, Maurer JD. Heuser RL, Freedman MA. Births and Deaths: United States, 1995. *Monthly Vital Statistics Report*, Vol. 45, No. 3, Supplement 2. Hyattsville, Maryland: National Center for Health Statistics. 1996.

(2) Ventura SJ, Clarke SC, Mathews TJ. Recent Declines in Teenage Birth Rates in the United States: Variations by State, 1990-94. *Monthly Vital Statistics Report*, Vol. 45, No. 5, Supplement. Hyattsville, Maryland: National Center for Health Statistics. 1996.

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Recent Declines in Teenage Birth Rates in the United States: Variations by State, 1990–94

by Stephanie J. Ventura, A.M.; Sally C. Clarke, M.A.; and T. J. Mathews, M.S., Division of Vital Statistics

Abstract

Objectives—This report presents teenage birth rates by State for 1990–94. Rates for the United States for 1970–94 are shown to put the State changes in perspective. U.S. rates for 1990–94 are shown by race and Hispanic origin of mother and for teenage subgroups 15–17 and 18–19 years as well as for teenagers 15–19 years. Also presented in the same detail are birth rates by mother's State of residence for 1994, and birth rates for teenage subgroups by State for 1990–94.

Methods—Descriptive tabulations of birth rates for teenagers for the United States and by State are presented and explained.

Results—After increasing from 1990 to 1991, birth rates declined for American teenagers during the years 1991–94; rates fell 3 percent each for teenagers 15–17 and 18–19 years. Preliminary data indicate that the birth rate for teenagers 15–19 years continued to decline in 1995, with a total decline of about 8 percent during the 1991–95 period. The largest declines were reported for black teenagers, with smaller declines measured for non-Hispanic white teenagers. Rates for Hispanic teenagers increased slightly. Declines from 1991 to 1994 were reported for the majority of the States.

Keywords: Teenage fertility • State-based birth rates • Fertility trends • Teenage pregnancy

Introduction

This report presents national and State-level data on teenage birth rates for 1990–94. The early 1990's have witnessed a slow but steady decline in birth rates for teenagers. Rates have declined steadily for black teenagers and for teenage subgroups 15–17 and 18–19 years; rates for white teenagers have generally declined while changes in rates for Hispanic teenagers have been less consistent. The data in this report show the patterns in teenage birth rates by State and the extent to which the recent national declines are shared by all States. Teenage childbearing continues to be an important social issue because studies have shown that teenage mothers are more likely to be poorly educated and more likely to face lifetime poverty.

Although birth rates for teenagers were substantially higher in the early 1970's than in recent years, most teenagers giving birth in the earlier period were married, whereas most teenagers giving birth recently are unmarried.

The birth rate for married teenagers was about 13 percent lower in 1994 than in 1970 (388 per 1,000 married women aged 15–19 compared with 444). Moreover, the proportion of 15–19-year-olds who were married was less than 5 percent in 1994 compared with 14 percent in 1970. In contrast to the change in childbearing by married teenagers, the rate for unmarried teenagers has risen virtually without interruption, although the pace of increase has slowed considerably since 1991. For

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unmarried teenagers 15–19 years, the rate doubled from 22 births per 1,000 in 1970 to 46 in 1994. The rate for younger teens aged 15–17 years rose from 17 to 32 per 1,000, while the rate for older teens rose from 33 to 70 per 1,000 unmarried women aged 18–19 years. As a consequence of these trends in marriage and childbearing among teenagers, the proportion of all teenaged births occurring to unmarried teenagers has risen dramatically during this period. For teenagers 15–19 years, the proportion rose from 30 percent in 1970 to 76 percent in 1994 (shown in table A). The percent unmarried nearly doubled for young teenagers 15–17 years and more than tripled for older teenagers 18–19 years.

The vast majority of teenage childbearing is unintended. Data on teenage pregnancy trends (including information on induced abortions and fetal losses as well as live births) in the 1990's are more limited than are data on live births. The data in this report provide some information on the extent to which efforts to reduce teenage pregnancy are succeeding.

State-level birth rates for unmarried teenagers can be computed only in census years when the necessary population data are available. Rates for unmarried teenagers by State have been published for 1980 and 1990 (1–2). In addition, rates for teenagers under 15 years of age are not shown in this report because the numbers of births are relatively small, 12,901 for the entire United States in 1994. Thus, the numbers are too small to compute reliable rates for many States.

Methods

Data shown in this report are based on 100 percent of the birth certificates registered in all States and the District of Columbia. More than 99 percent of births occurring in this country are registered.

Table A. Percent of teen births to unmarried teenagers

Year	15–19 years	15–17 years	18–19 years
1994	76	64	70
1990	67	78	61
1985	58	71	51
1980	48	62	40
1975	38	51	30
1970	30	43	22

Population data for computing birth rates were provided by the U.S. Bureau of the Census (3,4). Tables showing data by State provide information for the 50 States and the District of Columbia. Rates are not shown for Puerto Rico, the Virgin Islands, and Guam, because the population data by age needed to compute teenage birth rates are not available for these areas. State rates are based on mother's place of residence.

All tabulations are by race and Hispanic origin of mother as reported on the birth certificate. Race and ethnicity differentials in rates for teenagers may reflect differences in income, education, access to health care, and health care coverage. Additional information on the computation of birth rates, population denominators, and statistical significance is presented in the Technical notes.

Results and discussion

There were 505,488 live births to teenagers 15–19 years in 1994 resulting in a birth rate of 58.9 per 1,000 women aged 15–19 years (table 1). The birth rate for teenagers fell steadily from 1970 (68.3) to 1976 (52.8), a 22-percent decline, fluctuated modestly over the next 10 years reaching a low of 50.2 in 1986, increased considerably—by 24 percent— from 1986 to 1991 (62.1) and then declined steadily from 1991 to 1994, by 5 percent overall, to its current level (table 1 and figure 1). Preliminary data indicate that the U.S. teenage birth rate declined again in 1995 to 56.9 per 1,000, 3 percent lower than in 1994 (5).

The birth rate for teenagers aged 18–19 years was 91.5 in 1994, more than twice the rate for teenagers 15–17 years (37.6). The trend in the birth rates for teenagers 15–17 years and teenagers 18–19 years had essentially the same pattern during the 1970–94 period, but the disparity between the rates for the two age groups diminished somewhat because the rate for older teenagers in 1994 was much lower than in 1970, while rates for younger teenagers were essentially the same in 1970 and 1994.

Table 2 shows teenage birth rates for each year, 1990–94, for each State and the District of Columbia. In 1994, birth rates for teenagers 15–19 years ranged from a high of 114.7 in the District of Columbia to a low of 30.1 in New Hampshire. In general, the 10 States with the highest rates in 1994 were located in the South or West while the 10 States with the lowest rates were in the Northeast and Midwest (figure 2). The same regional variation in birth rates was also evident for the more detailed age groups of 15–17 and 18–19 years.

The majority of States had lower birth rates for teenagers in 1994 than in 1991, the year with the recent high point. The State with the largest decline was Maine (18 percent), followed by Vermont and Alaska (16 percent), Idaho (14 percent), and Montana (12 percent). About

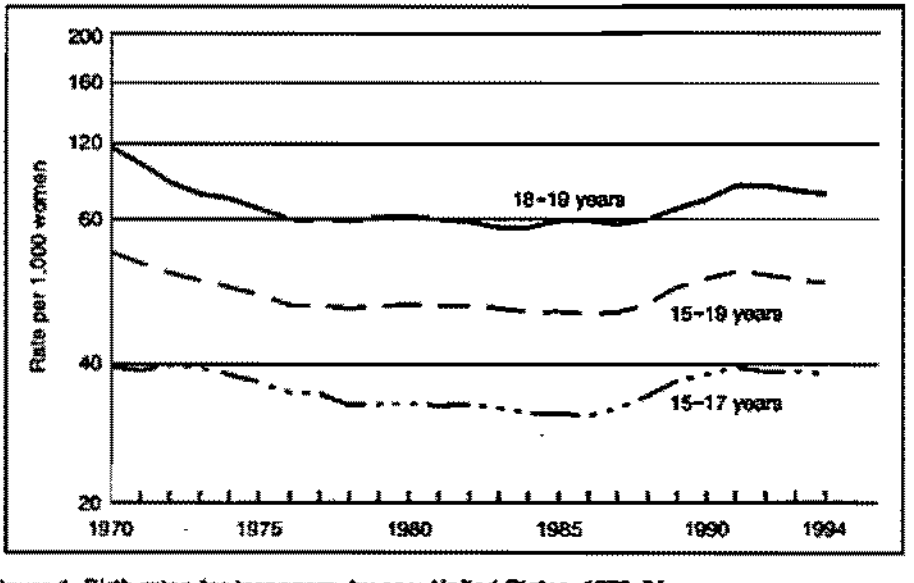

Figure 1. Birth rates for teenagers, by age: United States, 1970–94

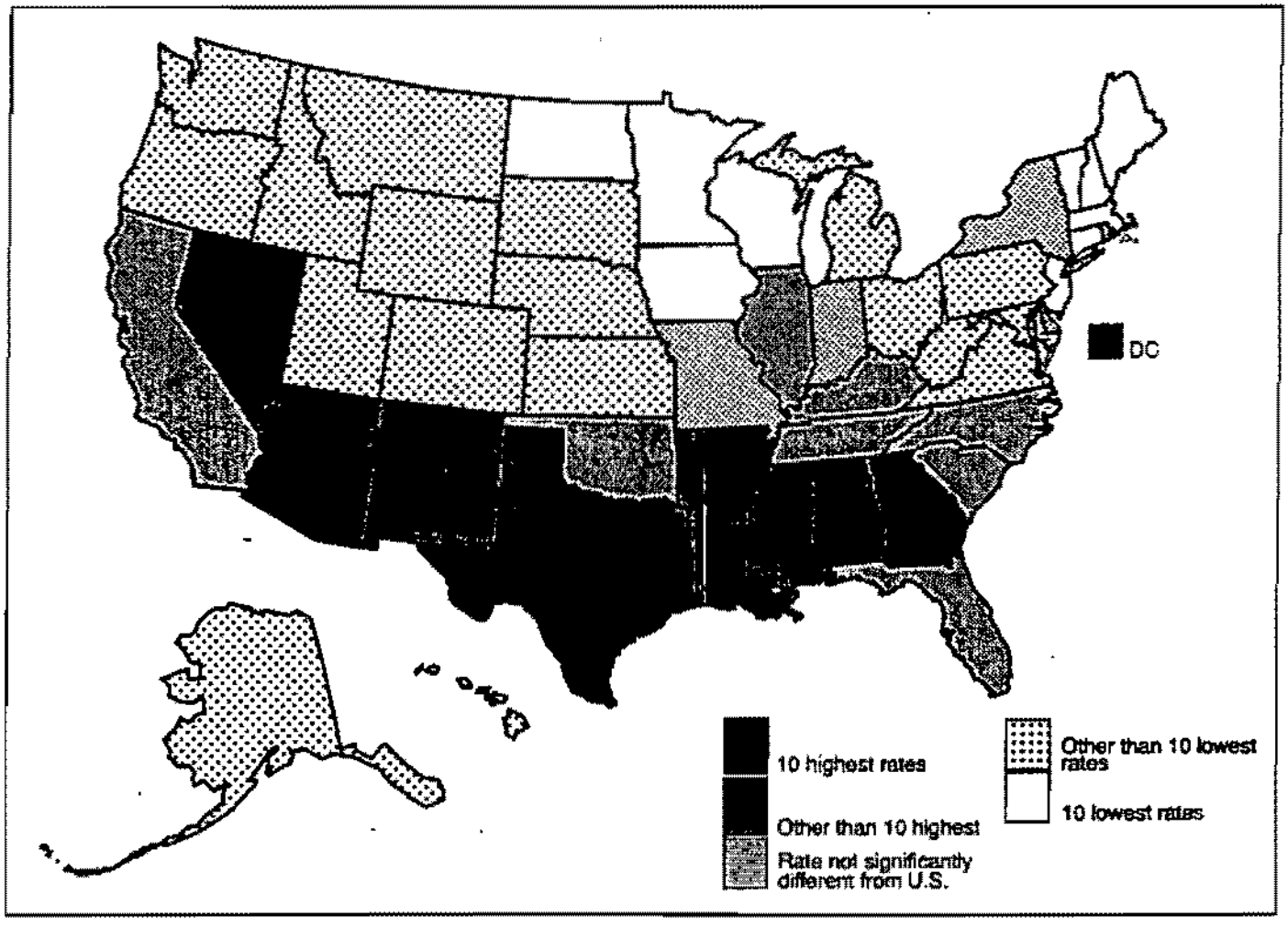

Figure 2. Teenage birth rates by State, 1994

half of the States had declines of between 5 and 11 percent while the teenage birth rate for 13 States and the District of Columbia was not significantly different in 1994 than in 1991 (figure 3). In general, many States with the lowest rates in 1994 experienced the largest declines. For the more detailed age groups 15–17 and 18–19 years, the majority of States had declines in rates for both age groups for the 1991–94 period (table 2). Many changes in rates for detailed age groups, especially 15–17 years, are not statistically significant because the numbers of births are small.

Birth rates for black and Hispanic teenagers 15–19 years were very similar, 104.5 and 107.7, respectively, and were about two and a half times the rate for non-Hispanic white teenagers, 40.4 (table 3). This pattern has been observed for many years (2,6). The rate for black teenagers fell sharply during the 1991–94 period, by 10 percent, from 115.5 to 104.5 per 1,000. The rate for non-Hispanic white teenagers declined 7 percent, from 43.4 to 40.4 per 1,000, and the rate for Hispanic teenagers rose 1 percent, from 106.7 to 107.7. The disparity between the rate for non-Hispanic white teenagers and the rates for black and Hispanic teenagers was observed for both 15–17 year olds and 18–19 year olds (table 3 and figure 4).

The pattern of lower birth rates for non-Hispanic white than for black and Hispanic teenagers was evident in almost every State in which there were sufficient data to compute birth rates for all groups (table 4). The birth rate for non-Hispanic white teenagers 15–19 years varied between 63.1 in Arkansas and 15.3 in the District of Columbia; the rate for black teenagers varied between 142.3 in Wisconsin and 66.4 in New Mexico; the rate for Hispanic teenagers varied between 159.6 in North Carolina and 49.3 in Louisiana. These relationships within racial and Hispanic subgroups have been noted for several years (1,2,7).

With few exceptions, birth rates for teenagers 18–19 years were at least double the rates for younger teenagers 15–17 years. This pattern was observed for all races combined as well as for racial and Hispanic origin subgroups. In the age group 15–17 years, rates were higher for black and Hispanic teenagers than for non-Hispanic white teenagers. Among the areas for which birth rates could be reliably computed for black teenagers 15–17 years, rates were highest in the District of Columbia, Illinois, and Wisconsin (105–107 per 1,000 women) and lowest in New Mexico, New York, and Washington (51–52 per 1,000). Birth rates for Hispanic teenagers 15–17 years were computed for 35 States. Rates were highest in Connecticut and Massachusetts (101 per 1,000) and lowest in Louisiana and Maryland (28–34 per 1,000). Birth rates for non-Hispanic white teenagers 15–17 years

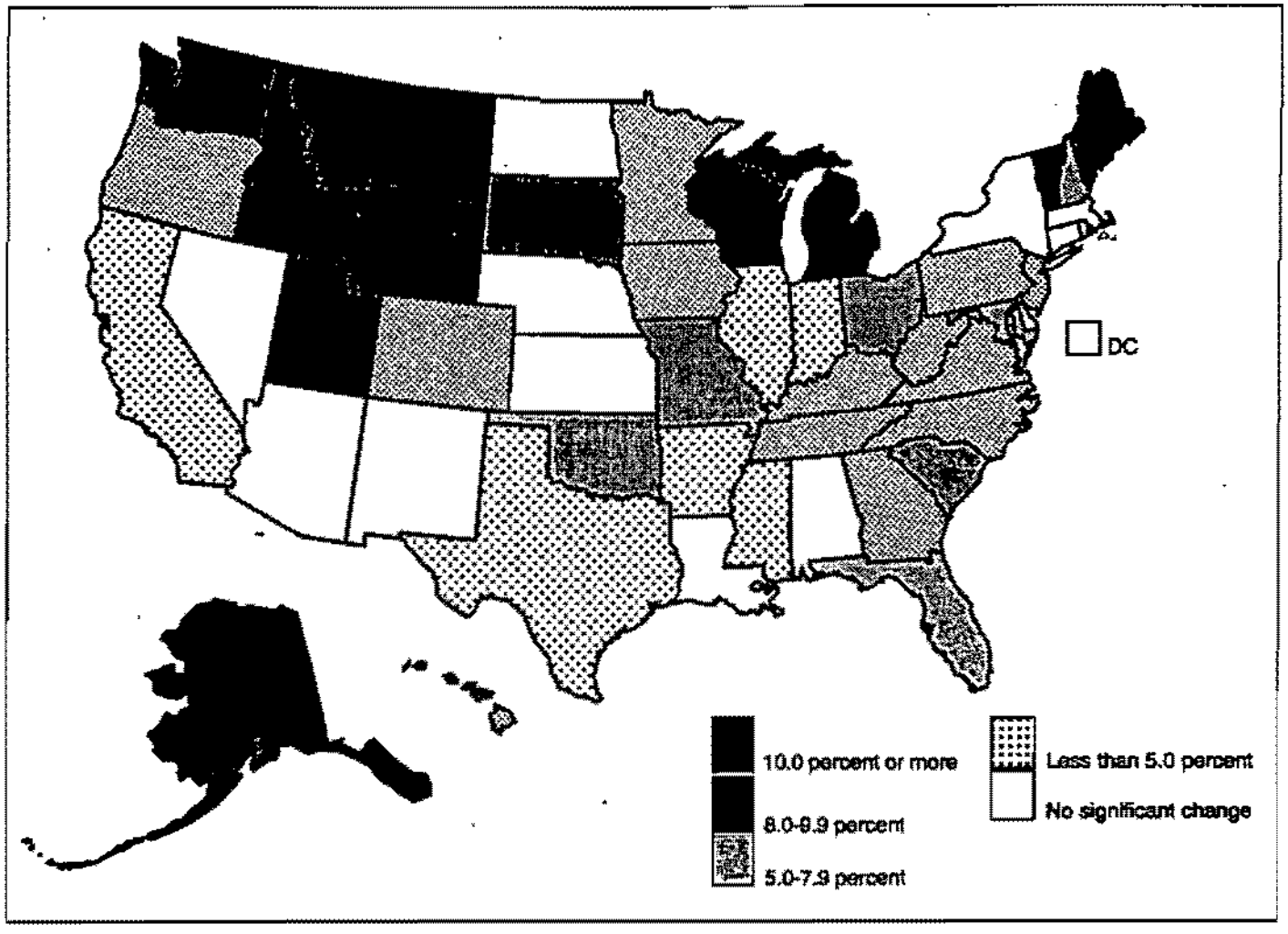

Figure 3. Percent decline in teenage birth rates by State, 1991–94

were substantially lower than for black or Hispanic teenagers; rates were highest in Alabama, Arkansas, Kentucky, and Mississippi (35–37 per 1,000) and lowest in Hawaii and New Jersey (8–10 per 1,000).

Patterns were similar for older teenagers; rates were higher for Hispanic and black teenagers than for non-Hispanic white teenagers. Among the 31 States for which birth rates for Hispanic teenagers were computed, rates ranged from 80 to 100 per 1,000 women aged 18–19 years in Florida and Louisiana to 234–275 per 1,000 in Georgia and North Carolina. The variation in rates for black teenagers 18–19 years was narrower, with a range of 165 per 1,000 in New York to 193–200 per 1,000 in Illinois and Wisconsin. Rates were substantially lower for non-Hispanic white teenagers 18–19 years, ranging from 29 to 33 per 1,000 (New Jersey and Connecticut) to 98–101 (Arkansas, Kentucky, and Tennessee).

Some of the differences in overall rates by State reflect differences in the composition of the teenage populations by race and Hispanic origin. Given that birth rates for Hispanic and black

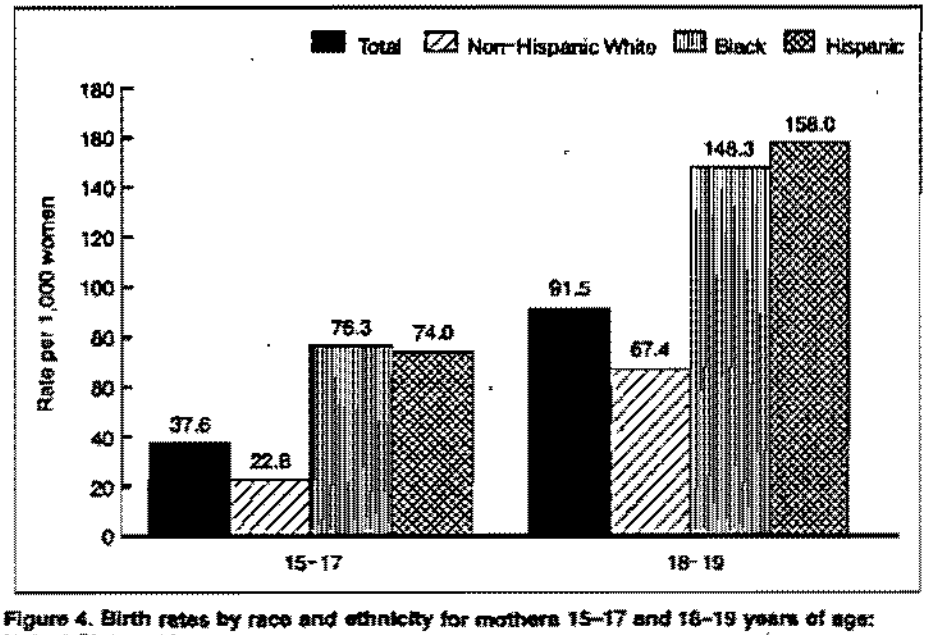

Figure 4. Birth rates by race and ethnicity for mothers 15–17 and 18–19 years of age: United States, 1994

teenagers are more than double the rates for non-Hispanic white teenagers, States with relatively high proportions of Hispanic and/or black teenagers in their populations would be expected to have higher overall teenage birth rates. This is in fact the case. Birth rates standardized for differences in population composition by race and ethnicity control for these compositional differences (table 5). The standard population used was the distribution of all U.S. teenagers by race and Hispanic origin (see Technical notes).

For example, the standardized teenage birth rate for California for 1994 was 56.5, considerably below the actual rate of 71.3. This difference results from the relatively lower proportion of Hispanics in the U.S. population compared with the California population. The most dramatic example of the compositional effect was for the District of Columbia. The standardized rate, 43.9, was well below the actual rate of 114.7, reflecting the much lower proportion of black women in the U.S. population compared with the District of Columbia. For many States, the standardized rate was often higher than the actual rate. An example is Minnesota, with a standardized rate of 54.3 compared with the actual rate of 34.4. Compared with the U.S. teenage population, Minnesota has substantially fewer Hispanic and black teenagers.

When State rates are examined separately by race and Hispanic origin, certain geographic patterns emerge. For example, 15 of the 17 highest rates for non-Hispanic white teenagers were generally in the South. Conversely, 16 of the 18 lowest rates were in the Northeast, Middle Atlantic, and Midwest. Of the 15 highest rates for black teenagers, 13 were in the Middle Atlantic and Midwest States. There was no consistent pattern in the States with the lowest rates for black teenagers. Although the Hispanic population is highly concentrated geographically, with more than 60 percent of all births occurring to residents of California and Texas, birth rates for Hispanic teenagers for those States were not among the highest. There was no apparent pattern in the States with high and low rates for Hispanic teenagers.

Although birth rates have fallen for teenagers in the 1990's, nonetheless the rates reported for 1994 are still as high or higher than they were two decades earlier (figure 1). Despite the drop in the rate for teenagers 15–17 years, the number of births for this age group increased by 2 percent in 1994, a reflection of the 3-percent increase in the number of teenagers from 1993 to 1994 (3). Population projections show that the number of women in this age group will continue to rise over the next several years (8). Thus, without larger declines in the birth rate for this age group, the number of births to young teenagers can be expected to continue to increase.

The number of births to older teenagers 18–19 years changed very little between 1993 and 1994, because the 1-percent decline in the birth *rate* was matched by a 1-percent increase in the *number of women* in that age group (1). The number of teenagers 18–19 years is projected to continue to increase over the next several years (8). In order for the number of births to decline, the birth rate will have to decline further to compensate for the increasing number of women.

The rates in this report can be useful in assessing the extent to which programs to reduce teenage pregnancy are succeeding. Comprehensive assessment, however, requires that data on legal induced abortion and fetal loss be combined with the live-birth data to produce teenage pregnancy rates. State-level pregnancy rates have been published for 1990–92 (7,9). For the period 1991–92, State teenage pregnancy rates declined significantly, by 2 to 15 percent, in 31 of the 42 reporting areas for which age-specific abortion data were available. The U.S. rate for women aged 15–19 years declined 3 percent from 1991 to 1992, from 115.0 pregnancies per 1,000 women aged 15–19 years to 111.1 per 1,000 (10–13). More recently, preliminary abortion statistics indicate a continued decline in abortions and abortion rates for teenagers (14). This coupled with the declines in teenage birth rates in 1993 and 1994 suggest that the declines in teenage pregnancy rates have continued.

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Table 1. Births and birth rates for teenagers 15–19 years, by age and race of mother: United States, 1970–94

[Birth rates per 1,000 women in specified group]

Year	All races[1]			White			Black		
	Total	15–17 years	18–19 years	Total	15–17 years	18–19 years	Total	15–17 years	18–19 years
				Number of births					
1994	505,488	185,169	310,319	348,081	126,386	221,693	140,968	52,563	78,405
1993	501,093	180,535	310,558	341,817	121,309	220,508	143,153	53,156	79,997
1992	505,415	187,549	317,866	342,739	118,786	223,953	146,800	53,002	83,798
1991	519,577	188,226	331,351	352,359	118,809	233,550	150,956	53,571	87,385
1990	521,826	183,327	338,499	354,482	114,934	239,548	151,613	52,881	89,732
1989	506,503	181,044	325,459	340,472	111,736	228,736	150,699	53,632	86,967
1988	478,353	176,624	301,729	323,830	109,739	214,091	140,608	51,856	78,752
1987	462,312	172,591	289,721	315,464	108,592	206,872	134,050	50,361	74,689
1986	461,905	168,572	293,333	317,970	107,177	210,793	131,594	47,003	74,591
1985	467,485	167,789	299,696	324,590	107,993	216,597	130,857	45,656	75,201
1984	469,562	166,744	302,938	326,301	106,782	219,519	131,497	45,832	75,565
1983	489,286	172,673	316,613	343,199	111,163	232,036	133,853	47,332	76,521
1982	513,758	181,162	332,596	363,742	117,644	246,098	137,458	49,362	76,094
1981	527,392	187,397	339,995	375,432	122,561	252,871	140,344	50,944	79,400
1980	552,161	198,222	353,939	393,564	129,341	264,223	147,378	55,089	82,309
1979	549,472	200,137	349,335	383,807	127,970	255,837	152,805	67,728	85,077
1978	543,407	202,661	340,746	380,060	130,957	249,103	151,001	67,317	83,684
1977	559,154	213,786	345,368	392,163	138,223	253,960	155,190	71,182	84,008
1976	558,744	215,430	343,251	390,275	139,901	250,374	153,936	71,429	82,507
1975	582,238	227,270	354,968	410,129	148,344	261,785	161,044	74,946	86,098
1974	595,449	234,177	361,272	420,152	152,257	267,895	164,430	77,947	86,483
1973	604,096	238,403	365,693	424,833	153,416	271,417	166,773	81,158	87,615
1972	616,280	236,641	379,639	433,986	150,997	283,089	172,349	82,217	90,132
1971	627,942	226,298	401,644	446,726	143,806	302,920	171,684	78,238	92,446
1970	644,708	223,590	421,118	463,608	143,646	319,962	171,826	76,882	94,944
				Birth rate					
1994	58.9	37.6	91.5	51.1	30.7	62.1	104.5	76.3	146.3
1993	59.6	37.8	92.1	51.1	30.3	62.1	108.6	78.8	151.9
1992	60.7	37.8	94.5	51.8	30.1	63.8	112.4	81.3	157.9
1991	62.1	38.7	94.4	52.8	30.7	63.5	115.5	84.1	158.6
1990	59.9	37.5	89.6	50.8	29.5	78.0	112.8	82.3	152.9
1989	57.3	36.4	84.2	47.9	28.1	72.9	111.5	81.9	151.9
1988	53.0	33.6	79.9	44.4	26.0	69.6	102.7	75.7	142.7
1987	50.8	31.7	76.5	42.5	24.6	68.9	97.6	72.1	135.8
1986	50.2	30.5	79.6	42.3	23.8	70.1	95.8	69.3	135.1
1985	51.0	31.0	79.6	43.3	24.4	70.4	95.4	69.3	132.4
1984	50.6	31.0	77.4	42.9	24.3	68.4	94.1	69.2	126.1
1983	51.4	31.6	77.4	43.9	25.0	68.8	93.9	69.6	127.1
1982	52.4	32.3	79.4	45.0	25.5	70.8	94.3	69.7	128.9
1981	52.2	32.0	80.0	44.9	25.4	71.5	94.5	69.3	131.0
1980	53.0	32.5	82.1	45.4	25.5	73.2	97.8	72.5	135.1
1979	52.3	32.3	81.3	43.7	24.7	71.0	101.7	75.7	140.4
1978	51.5	32.2	79.8	42.9	24.9	69.4	100.9	75.0	139.7
1977	52.8	33.9	80.9	44.1	26.1	70.5	104.7	79.6	142.9
1976	52.9	34.1	80.5	44.1	26.3	70.2	104.9	80.3	142.5
1975	55.6	36.1	85.0	46.4	28.0	74.0	111.6	85.6	152.4
1974	57.5	37.3	88.7	47.9	28.7	77.3	116.5	90.0	158.7
1973	59.3	38.5	91.2	49.0	29.2	79.3	123.1	96.0	166.6
1972	61.7	39.0	96.9	51.0	29.3	84.3	129.8	99.5	179.5
1971	64.5	38.2	105.3	53.6	28.5	92.3	134.5	99.4	182.6
1970	68.3	38.5	114.7	57.4	29.2	101.5	140.7	101.4	204.9

[1]Includes races other than white and black.

NOTE: Figures for 1970–79 are by race of child. See Technical notes.

Table 2. Birth rates for teenagers 15–19 years by age: United States and each State, 1990–94

(Rates per 1,000 women in specified group)

State	15–19 years					15–17 years					18–19 years				
	1994	1993	1992	1991	1990	1994	1993	1992	1991	1990	1994	1993	1992	1991	1990
United States	58.9	59.6	60.7	62.1	59.9	37.6	37.8	37.8	38.7	37.5	91.5	92.1	94.5	94.4	88.5
Alabama	72.2	70.5	72.5	73.9	71.0	50.6	48.2	46.3	47.7	47.4	103.4	102.3	109.9	109.5	101.4
Alaska	55.2	56.8	63.9	65.4	65.3	32.9	33.4	34.5	35.3	31.2	90.0	91.8	108.6	111.7	120.0
Arizona	78.7	79.8	81.7	80.7	75.5	50.2	49.6	51.2	51.4	47.7	123.5	126.4	128.3	122.6	111.6
Arkansas	76.3	73.9	75.5	79.8	80.1	48.8	45.9	46.8	49.4	50.4	117.1	114.7	117.1	122.6	120.7
California	71.3	72.7	74.0	74.7	70.6	45.5	46.4	46.1	46.9	44.6	110.6	112.3	116.0	113.6	104.3
Colorado	54.3	55.2	58.4	58.2	54.5	34.3	34.9	36.7	35.3	33.1	85.7	86.5	91.5	91.4	82.9
Connecticut	40.3	39.2	39.4	40.4	38.8	26.9	26.4	25.9	26.3	26.4	58.2	58.4	59.3	59.4	53.9
Delaware	60.2	59.7	59.8	61.1	64.5	44.6	39.2	43.8	40.3	38.4	82.9	89.4	82.0	87.1	71.4
District of Columbia	114.7	128.8	118.1	114.4	93.1	87.9	102.1	88.6	102.8	86.4	151.0	162.8	146.1	125.5	99.7
Florida	64.4	64.9	66.3	68.8	69.1	42.4	42.1	42.2	44.0	44.9	96.3	98.6	101.6	102.9	100.6
Georgia	71.7	73.6	74.5	76.3	75.5	48.5	46.9	46.4	50.6	50.1	107.4	108.4	111.6	110.9	108.5
Hawaii	53.5	53.0	63.5	58.7	61.2	31.7	29.7	31.5	34.7	32.5	83.6	85.0	83.1	91.5	102.0
Idaho	48.8	50.7	51.7	53.9	50.8	27.0	29.4	28.5	29.3	26.3	78.4	83.2	87.8	90.8	84.8
Illinois	62.8	63.0	63.8	64.8	62.9	41.1	41.4	40.3	40.6	40.1	96.7	96.1	96.7	99.1	93.3
Indiana	57.9	58.6	58.7	60.5	58.6	34.9	34.4	34.6	35.2	35.3	92.4	94.0	93.7	95.2	87.6
Iowa	39.7	41.1	40.8	42.6	40.5	22.7	23.1	21.0	22.6	20.4	66.5	69.3	72.3	71.5	65.7
Kansas	53.5	55.7	55.7	55.4	56.1	30.3	31.0	30.3	29.4	30.4	90.1	94.3	95.6	94.1	89.9
Kentucky	64.5	64.0	64.7	68.9	67.6	39.7	39.5	38.8	42.6	40.8	102.1	100.2	103.0	105.5	103.0
Louisiana	74.7	76.1	76.5	76.1	74.2	51.3	52.6	52.4	51.1	49.5	109.6	110.9	112.2	111.4	106.9
Maine	35.5	37.1	39.8	43.5	43.0	18.1	20.0	21.2	23.8	23.3	62.8	62.8	66.6	70.1	68.8
Maryland	49.7	50.1	50.7	54.3	53.2	32.5	33.8	32.8	35.2	33.5	78.5	74.5	76.6	79.6	78.4
Massachusetts	37.2	37.9	38.0	37.6	35.1	23.7	23.6	24.7	25.2	23.7	57.3	58.1	56.0	52.9	47.0
Michigan	52.1	53.2	56.5	59.0	59.0	31.6	32.9	33.6	35.5	35.0	83.6	83.5	89.6	91.1	88.8
Minnesota	34.4	35.0	38.0	37.3	36.3	19.8	20.4	20.8	20.7	19.8	57.9	57.8	60.0	61.4	57.8
Mississippi	83.0	83.3	84.2	85.6	81.0	58.2	57.6	59.1	60.1	57.5	120.2	121.2	120.6	120.4	111.0
Missouri	59.0	59.8	63.2	64.5	62.8	35.4	36.6	38.2	38.7	39.3	96.2	95.2	100.8	100.7	93.0
Montana	41.2	45.7	46.2	46.7	46.4	22.1	26.5	25.8	23.8	24.0	72.1	76.3	76.3	83.0	85.9
Nebraska	42.8	40.5	41.1	42.4	42.3	24.2	22.7	22.8	23.6	23.9	70.6	66.6	68.5	69.2	68.0
Nevada	73.6	73.4	71.4	75.3	73.3	46.6	44.9	42.7	43.9	42.5	116.2	117.1	113.9	119.1	115.1
New Hampshire	30.1	30.7	31.3	33.3	33.0	14.5	14.7	14.8	17.1	17.1	55.2	55.0	54.4	53.8	51.5
New Jersey	39.3	38.1	39.2	41.6	40.5	25.6	25.1	24.4	26.3	24.4	60.6	57.6	61.0	62.8	62.4
New Mexico	77.4	81.1	80.3	79.6	78.2	51.7	53.6	51.5	50.0	48.9	118.4	123.7	124.1	124.4	124.2
New York	45.8	45.7	45.3	46.0	43.6	28.8	29.8	29.0	29.1	27.5	70.1	69.4	69.3	69.0	63.4
North Carolina	66.3	66.8	69.5	70.5	67.6	43.5	42.9	43.8	46.2	44.9	100.3	101.4	105.6	101.7	94.4
North Dakota	34.6	36.8	37.3	35.6	35.4	15.4	17.8	17.6	18.1	15.5	65.5	67.4	68.3	62.4	62.3
Ohio	55.0	56.8	58.0	60.5	57.9	33.7	34.8	34.9	36.2	34.3	87.4	89.2	91.5	93.8	88.1
Oklahoma	65.9	68.6	69.9	72.1	69.8	40.5	40.5	41.1	41.7	38.8	104.9	111.2	113.3	115.6	104.3
Oregon	50.7	51.2	53.2	54.9	54.6	30.1	30.2	30.3	31.3	30.7	83.5	84.4	89.8	90.7	87.9
Pennsylvania	43.8	44.3	45.2	46.8	44.9	28.0	28.4	28.7	29.2	28.4	68.0	65.0	68.9	70.5	64.9
Rhode Island	47.7	49.8	47.5	45.4	43.9	32.2	33.5	29.7	30.1	31.6	71.5	73.5	72.1	63.6	55.7
South Carolina	66.5	68.0	70.3	72.9	71.3	45.7	43.6	45.6	48.0	47.0	96.9	97.8	104.6	105.4	101.4
South Dakota	42.6	44.3	48.3	47.5	46.6	23.0	24.9	26.9	26.3	23.9	74.1	74.7	81.9	79.2	78.7
Tennessee	71.0	70.2	71.4	75.2	72.3	43.2	43.4	44.6	47.8	45.0	113.5	109.7	109.5	112.1	107.3
Texas	77.6	76.1	78.9	78.9	75.3	51.8	51.3	51.1	50.4	48.0	116.4	117.8	120.2	119.3	112.2
Utah	42.7	44.5	46.3	48.2	48.5	24.9	25.7	26.1	27.0	26.0	70.4	74.0	76.4	79.6	78.7
Vermont	33.0	35.2	35.6	39.2	34.0	16.5	17.0	17.3	21.3	19.5	56.7	62.6	62.0	62.0	49.8
Virginia	50.7	49.6	51.6	53.5	52.9	31.2	30.6	31.0	31.8	32.1	78.8	78.7	80.1	81.2	77.7
Washington	48.2	50.2	50.9	53.7	53.1	28.5	29.3	30.8	31.0	29.6	78.9	82.2	81.5	86.5	84.4
West Virginia	54.3	55.6	58.0	57.8	57.3	32.5	33.5	32.4	32.4	33.0	87.0	88.2	90.7	93.2	89.9
Wisconsin	38.8	41.1	42.1	43.7	42.6	23.0	23.9	23.9	24.8	24.2	63.6	67.5	70.1	71.2	66.1
Wyoming	48.2	49.6	49.6	54.2	55.3	24.9	25.9	24.8	28.4	29.7	88.4	88.0	89.8	96.6	96.1

NOTES: Rates for 1990–92 were previously published. 1991–92 (ages 15–19 only): CDC. "State-Specific Pregnancy and Birth Rates Among Teenagers—United States, 1991–1992." MMWR 44(37):677–84. 1995. 1990: Clarke SC, Ventura SJ. Birth and Fertility Rates for States: United States, 1990. National Center for Health Statistics. Vital Health Stat 21(52). 1994.

Table 3. Birth rates for teenagers 15–19 years by age, race, and Hispanic origin of mother: United States, 1990–94

[Rates per 1,000 women in specified group]

Year	15–19 years			15–17 years			18–19 years		
	Hispanic[1]	Non-Hispanic White	Black	Hispanic[1]	Non-Hispanic White	Black	Hispanic[1]	Non-Hispanic White	Black
1994	107.7	40.4	104.5	74.0	22.8	76.3	158.0	67.4	148.3
1993	106.8	40.7	106.6	71.7	22.7	79.8	159.1	67.7	151.9
1992[2]	107.1	41.7	112.4	71.4	22.7	81.3	159.7	69.8	157.9
1991[2]	106.7	43.4	115.5	70.6	23.6	84.1	156.5	70.5	158.6
1990[3]	100.3	42.5	112.8	65.9	23.2	82.3	147.7	66.6	152.9

[1]Persons of Hispanic origin may be of any race; see Technical notes.

[2]Rates estimated for the United States, based on information for 49 States and the District of Columbia, which reported Hispanic origin on the birth certificate; information was not reported for New Hampshire; see Technical notes.

[3]Rates computed for the total of 48 States and the District of Columbia, which reported Hispanic origin on the birth certificate in 1990; this information was not reported by Oklahoma and New Hampshire. See Technical notes.

Table 4. Birth rates for teenagers 15–19 years by age and race/Hispanic origin: United States and each State, 1994

[Rates per 1,000 women in specified group]

State	15–19 years					15–17 years					18–19 years				
		White					White					White			
	All races[1]	Total	Non-Hispanic	Black	Hispanic[2]	All races[1]	Total	Non-Hispanic	Black	Hispanic[2]	All races[1]	Total	Non-Hispanic	Black	Hispanic[2]
United States	56.9	51.1	40.4	104.5	107.7	37.6	30.7	22.8	76.3	74.0	91.5	82.1	67.4	148.3	156.0
Alabama	72.2	55.1	54.8	106.1	71.8	50.8	35.2	35.1	82.8	*	103.4	83.7	83.2	145.8	*
Alaska	55.2	44.5	43.4	79.3	*	32.3	24.8	24.3	*	*	90.0	74.0	71.9	*	*
Arizona	76.7	77.3	49.2	99.7	136.3	50.2	49.4	28.3	64.9	94.2	123.5	120.9	82.0	154.3	201.2
Arkansas	76.3	64.1	63.1	120.2	118.4	48.8	37.6	37.2	88.2	*	117.1	102.9	101.1	169.3	*
California	71.3	76.6	38.1	89.2	116.4	45.5	46.8	21.4	58.9	79.7	110.8	119.0	64.5	137.3	175.1
Colorado	54.3	52.0	38.2	96.6	109.3	34.3	33.1	21.3	61.0	81.8	85.7	81.8	64.5	154.5	152.4
Connecticut	40.3	33.0	20.1	83.6	125.0	28.9	22.9	11.7	72.2	101.4	58.2	48.6	33.1	126.9	162.9
Delaware	60.2	43.0	38.4	115.4	*	44.6	29.5	26.2	92.2	*	82.9	62.6	56.1	150.6	*
District of Columbia	114.7	16.9	15.3	138.5	96.7	87.9	10.7	*	107.0	*	151.0	25.5	*	180.5	*
Florida	64.4	51.5	46.9	113.1	68.2	42.4	31.0	27.0	84.0	46.5	98.3	82.5	77.4	159.3	99.9
Georgia	71.7	54.1	51.5	106.9	133.8	48.5	32.5	31.3	79.4	68.4	107.4	86.6	81.9	150.8	233.7
Hawaii	53.5	33.0	29.6	*	107.7	31.7	13.5	9.5	*	70.1	83.6	69.4	57.8	*	160.6
Idaho	46.6	46.2	40.6	*	117.8	27.0	26.9	22.6	*	82.7	76.4	75.8	68.1	*	171.2
Illinois	62.6	46.2	34.3	139.1	112.6	41.1	26.8	18.8	105.4	71.5	95.7	78.4	58.3	192.7	175.5
Indiana	57.9	51.8	50.8	115.3	82.2	34.9	29.4	28.7	85.5	52.7	92.4	85.3	83.9	160.2	125.8
Iowa	39.7	37.5	36.2	117.4	96.9	22.7	21.0	20.0	67.1	63.8	66.5	63.8	61.9	*	*
Kansas	53.5	48.7	44.9	116.4	106.9	30.3	26.3	23.5	82.6	69.4	90.1	84.1	76.7	171.7	164.8
Kentucky	64.5	60.4	60.3	113.5	*	39.7	35.6	35.6	85.7	*	102.1	97.6	97.5	159.0	*
Louisiana	74.7	49.2	48.6	115.3	49.3	51.3	28.8	29.1	86.7	27.9	109.8	79.3	79.9	158.6	80.3
Maine	35.5	35.0	35.0	*	*	18.1	17.7	17.6	*	*	62.5	62.1	62.1	*	*
Maryland	49.7	32.4	31.5	89.3	62.0	32.5	18.0	17.4	64.5	34.0	76.5	54.5	53.2	128.4	104.9
Massachusetts	37.2	32.6	23.5	90.5	132.9	23.7	20.5	13.0	60.2	101.0	57.3	50.6	38.9	136.1	180.3
Michigan	52.1	39.7	37.8	110.2	85.3	31.6	21.9	20.4	78.1	58.2	83.5	67.6	64.9	158.9	127.2
Minnesota	34.4	28.6	26.9	132.3	98.9	19.6	15.1	14.0	99.3	62.4	57.9	50.4	47.9	185.8	158.6
Mississippi	83.0	58.6	58.7	114.4	*	58.2	34.5	34.6	85.6	*	120.2	89.1	89.3	156.0	*
Missouri	59.0	49.1	48.7	123.1	85.4	35.4	26.3	26.0	92.7	40.1	96.2	84.8	84.3	171.1	106.0
Montana	41.2	34.7	34.0	*	*	22.1	18.9	17.5	*	*	72.1	61.4	60.3	*	*
Nebraska	42.8	37.9	34.5	119.3	110.6	24.2	20.7	18.0	83.7	78.6	70.8	63.5	59.2	170.8	*
Nevada	73.6	71.1	55.4	111.3	138.3	46.6	43.4	31.4	81.3	95.7	116.2	114.7	93.4	159.0	204.5
New Hampshire	30.1	30.1	29.6	*	*	14.5	14.3	13.9	*	*	55.2	55.4	54.7	*	*
New Jersey	39.3	27.2	16.5	99.7	81.1	25.6	16.0	8.2	71.8	55.7	60.6	44.2	29.2	144.0	120.3
New Mexico	77.4	76.2	43.7	66.4	102.4	51.7	51.7	24.5	50.6	74.1	118.4	115.0	74.5	*	146.8
New York	45.8	39.8	26.4	73.0	81.1	29.8	24.6	14.7	52.3	58.1	70.1	62.7	44.0	104.5	118.6
North Carolina	66.3	52.3	50.0	96.5	159.6	43.5	30.8	29.5	72.5	87.3	100.3	84.3	80.4	137.9	275.1
North Dakota	34.6	29.2	28.7	*	*	15.4	11.9	11.7	*	*	65.5	57.0	56.0	*	*
Ohio	55.0	48.1	45.2	116.1	83.6	33.7	26.3	25.6	83.9	54.2	87.4	76.1	74.9	167.5	129.2
Oklahoma	66.9	59.0	57.1	106.5	87.1	40.5	34.5	33.1	73.3	58.0	104.9	96.0	93.5	157.1	132.0
Oregon	50.7	49.8	43.6	101.6	136.6	30.1	29.2	24.9	68.1	93.5	83.5	82.5	73.9	*	204.3
Pennsylvania	43.8	34.0	30.5	118.1	129.3	29.0	19.8	18.7	90.6	67.3	68.0	58.0	51.5	161.9	180.1
Rhode Island	47.7	41.3	31.7	120.4	138.8	32.2	27.1	20.2	87.9	96.4	71.5	63.0	49.2	*	*
South Carolina	66.5	50.3	49.9	92.1	68.4	45.7	31.0	30.9	68.4	*	96.9	78.3	77.6	127.0	*
South Dakota	42.8	33.0	32.3	*	*	23.0	16.0	15.6	*	*	74.1	59.7	58.4	*	*
Tennessee	71.0	56.8	56.5	119.8	79.5	43.2	32.7	32.6	84.2	41.9	113.5	96.3	97.6	176.3	*
Texas	77.6	75.7	47.7	100.4	113.6	51.8	49.6	27.4	72.8	80.8	116.4	114.6	78.7	143.9	161.4
Utah	42.7	42.0	38.6	*	96.8	24.9	24.5	21.9	*	66.9	70.4	69.1	64.7	*	141.9
Vermont	33.0	33.2	33.4	*	*	16.5	16.5	16.5	*	*	56.7	59.1	59.6	*	*
Virginia	50.7	40.7	38.8	87.9	79.4	31.2	23.1	21.8	59.7	50.1	78.6	65.7	62.9	129.9	122.2
Washington	46.2	47.2	40.5	80.9	125.8	28.5	27.1	22.5	52.4	83.0	78.9	76.3	68.4	128.1	192.0
West Virginia	54.3	53.7	53.6	80.7	*	32.5	31.6	31.7	60.4	*	87.0	86.7	86.9	*	*
Wisconsin	39.8	28.8	26.6	142.3	92.6	23.0	15.2	13.5	105.7	66.8	63.6	50.1	47.0	199.7	131.3
Wyoming	48.2	47.6	45.4	*	74.9	24.9	24.1	22.2	*	*	86.4	86.1	83.4	*	*

* Figure does not meet standards of reliability or precision; based on fewer than 20 births or fewer than 1,000 women in specified group.

[1] Includes races other than white and black.

[2] Persons of Hispanic origin may be of any race.

Table 5. Birth rates for teenagers 15–19 years—Actual and standardized: United States and each State, 1994

[Rates per 1,000 women aged 15–19 years]

	Actual rate	Standardized rate[1]	Percent difference
United States	58.9	58.9	...
Alabama	72.2	63.6	–12.0
Alaska	55.2	55.4	0.2
Arizona	76.7	71.1	–6.7
Arkansas	76.3	78.0	2.3
California	71.3	56.5	–20.7
Colorado	54.3	56.9	4.8
Connecticut	40.3	45.1	11.8
Delaware	60.2	62.7	4.2
District of Columbia	114.7	43.9	–61.7
Florida	64.4	59.2	–8.1
Georgia	71.7	68.9	–3.8
Hawaii	53.5	44.6	–16.5
Idaho	46.6	55.1	18.3
Illinois	62.8	59.3	–5.6
Indiana	57.9	63.2	9.1
Iowa	39.7	57.0	43.8
Kansas	53.5	63.7	19.1
Kentucky	64.5	67.5	4.7
Louisiana	74.7	58.9	–21.1
Maine	35.5	42.1	18.4
Maryland	49.7	42.9	–13.7
Massachusetts	37.2	47.8	28.5
Michigan	52.1	54.8	5.3
Minnesota	34.4	54.3	58.1
Mississippi	83.0	62.2	–25.0
Missouri	59.0	61.5	4.1
Montana	41.2	43.9	6.4
Nebraska	42.8	60.2	40.6
Nevada	73.6	75.1	2.0
New Hampshire	30.1	35.6	18.0
New Jersey	39.3	37.2	–5.4
New Mexico	77.4	59.4	–23.3
New York	45.6	41.3	–9.9
North Carolina	66.3	72.2	9.0
North Dakota	34.6	41.7	20.7
Ohio	55.0	59.6	8.7
Oklahoma	65.9	69.5	5.5
Oregon	50.7	65.0	28.1
Pennsylvania	43.8	56.2	28.5
Rhode Island	47.7	64.2	34.6
South Carolina	66.5	58.0	–12.8
South Dakota	42.8	45.7	6.9
Tennessee	71.0	69.6	–2.0
Texas	77.6	63.5	–18.2
Utah	42.7	52.4	22.6
Vermont	33.0	32.3	–2.2
Virginia	60.7	60.1	–1.2
Washington	48.2	57.9	20.1
West Virginia	54.3	52.3	–3.5
Wisconsin	38.9	55.2	42.2
Wyoming	48.2	49.1	1.9

... Category not applicable.

[1] Standardized by direct standardization with distribution of the U.S. population of women aged 15–19 years by race and Hispanic origin for 1994 as standard population; see Technical notes.

Technical notes

Sources of data

Data shown in this report for 1994 are based on 100 percent of the birth certificates in all States and the District of Columbia. The data are provided to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program (VSCP).

Race

Beginning with the 1989 data year, NCHS is tabulating its birth data primarily by race of the mother. In 1988 and prior years, births were tabulated by the race of the child, which was determined from the race of the parents as entered on the birth certificate.

Trend data by race shown in this report are by race of mother for all years beginning with the 1980 data year. The factors influencing the decision to tabulate births by race of the mother have been discussed in detail in a previous report (15). They include the recent revision of the birth certificate, effective with the 1989 data year, which includes many more health questions that are directly associated with the mother in addition to many other items on the birth certificate for more than two decades. In all these instances, it is more appropriate to tabulate births by the mother's race. A second factor has been the increasing incidence of interracial parentage. In 1994, 4.4 percent of births were to parents of different races compared with just 1.7 percent in 1974. The third factor influencing the decision to tabulate births by race of mother is the growing proportion of births with race of father not stated, 16 percent in 1994 compared with 9 percent in 1974. This reflects the increase in the proportion of births to unmarried women; in many such cases, no information is reported on the father. These births are already assigned the race of the mother because there is no alternative.

Birth rates for American Indian teenagers and Asian or Pacific Islander teenagers are not included in this report. These two population groups are relatively small and tend to be highly concentrated geographically, which makes it possible to compute meaningful rates for only a few States.

Hispanic origin

Hispanic origin of the mother is reported and tabulated independently of race. Thus persons of Hispanic origin may be of any race. In 1994, 91 percent of women of Hispanic origin were reported as white (1).

Population denominators

Birth rates for 1991–94 shown in this report are based on populations estimated as of July 1 for each year; rates for 1990 are based on populations enumerated as of April 1, 1990. The population estimates have been published by the U.S. Bureau of the Census (1,2) and are based on the 1990 census counts by race and age that were modified to be consistent with Office of Management and Budget racial categories and historical categories for birth data, and in the case of age, to reflect age as of the census reference date. The modification procedures are described in detail in a census report (16).

In computing birth and fertility rates for the Hispanic population, births with origin of mother not stated are included with non-Hispanic births rather than being distributed. Thus, rates for the U.S. Hispanic population are underestimates of the true rates to the extent that the births with origin not stated (1.1 percent) were actually to Hispanic mothers. The origin of the mother was imputed for population counts when it was not stated. The effect on the rates is believed to be small.

Computation of rates

Rates were not computed if there were fewer than 20 births in the numerator or fewer than 1,000 women in the specified group in the denominator. An asterisk is shown in place of the rate.

Rates by Hispanic origin shown in table 3 for 1990 are based on a reporting area consisting of 48 States and the District of Columbia that reported Hispanic origin on the birth certificate in 1990. Data were not available for Oklahoma and New Hampshire; it is estimated that 99.6 percent of the Hispanic population lived in the reporting area (17). Rates for 1991–92 are based on all States except New Hampshire. It is estimated that more than 99.9 percent of the U.S. Hispanic population lived in the reporting area. Beginning in 1993, Hispanic origin was reported by all States. Given that more than 99 percent of the Hispanic origin population lived in the reporting area for 1990–92, the addition of Oklahoma and New Hampshire should not have affected the trends in the birth rates (17).

To eliminate the effect of differences among States in the distributions of the populations by race and Hispanic origin on the State birth rates, standardized birth rates were computed for 1994. The direct method of standardization was used. The 1994 distribution of the U.S. population of women aged 15–19 years by race and Hispanic origin was used as the standard population in this procedure.

Random variation and relative standard error

Although the birth data in this report for births since 1985 are not subject to sampling error, they may be affected by random variation in the number of births involved. When the number of events is small (perhaps less than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the data. Events of rare nature may be assumed to follow a Poisson probability distribution. For this distribution, a simple approximation may be used to estimate the error as follows:

If N is the number of births and R is the corresponding rate, the chances are 19 in 20 that

1. The "true" number of events lies between

$$N - 2\sqrt{N} \text{ and } N + 2\sqrt{N}$$

2. The "true" rate lies between

$$R - 2\frac{R}{\sqrt{N}} \text{ and } R + 2\frac{R}{\sqrt{N}}$$

If the rate R_1 corresponding to N_1 events is compared to the rate R_2 corresponding to N_2 events, the difference between the two rates may be regarded as statistically significant if it exceeds

$$2\sqrt{\frac{R_1^2}{N_1} + \frac{R_2^2}{N_2}}$$

For example, the teenage birth rate for Maine for 1994 was 35.5 births per

1,000 women 15–19 years of age and this rate was based on 1,459 recorded births. Given prevailing conditions, the chances are 19 in 20 that the "true" or underlying birth rate for Maine lies between 33.6 and 37.4 per 1,000 women 15–19 years of age. The 1991 teenage birth rate for Maine was 43.5 based on 1,805 recorded births. The difference between the rates is 8.0, which is more than twice the standard error of the difference

$$\sqrt{\frac{(35.5)^2}{1459} + \frac{(43.5)^2}{1805}}$$

of the two rates that is computed to be 2.8. From this, it is concluded that the difference between the teenage birth rate in 1991 and 1994 is statistically significant.

Contents

Suggested citation

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Internet: http://www.cdc.gov/nchswww/nchshome.htm

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7-0039 (12/96)

NOTE: Descriptions of the following five programs are excerpted from "Preventing Teen Pregnancy: Promoting Promising Strategies: A Guide for Communities," a report by HHS released at a White House press conference on June 13, 1996.

CHILDREN'S AID SOCIETY'S ADOLESCENT PREGNANCY PREVENTION PROGRAMS

Approach: Comprehensive, Multi-Faceted

Description: This program looks beyond sex education to the whole child, offering youngsters a variety of opportunities and a broad-spectrum of services as well as positive role models. The seven major components of the program include: career awareness; family and sex education; medical and health services; mental health services; academic assessment and homework help; self-esteem through the performing arts; and fostering lifetime participation in individual sports activities. The Children's Aid Society has another program in Harlem which, in addition to the above, guarantees youth in the program who graduate from high school or get a General Equivalency Diploma admission to New York City's Hunter College.

Goals of the Program: The primary goal of the program is to assist youth in avoiding unintended pregnancy and making responsible sexual decisions.

Location: 10 New York communities and 17 cities across the country

Population Served: Youth ages 10 through 20

Early Findings: For the six New York City sites employing this model, early data show--

- Participants have educational aspirations that are higher than those reported in national samples of high school students.
- Participants have better outcomes four years after entering high school when compared to the New York City public school Class of 1994.
- Participants have substantially lower rates of alcohol use when compared to national samples of adolescents in the same age group.
- Participants are less likely to be sexually active, and those who eventually do become sexually active are more likely to have used contraception when compared to national samples.

TEEN OUTREACH PROGRAM

Approach: Life Options

Description: The Teen Outreach Program, sponsored by the Association of Junior Leagues and the American Association of School Administrators, combines curriculum-based, facilitator-guided, small group discussions with volunteer service in the community. Issues addressed in the small group discussions include: self-understanding, communication skills, human growth and development, parenting issues, and family interaction. Some health and sex education is included. Facilitators serve as mentors and link youth to volunteer activities.

Goals of the Program: The program seeks to prevent early pregnancy and encourage school achievement.

Location: Nationwide and in Canada, mostly located in schools

Population Served: Youth ages 11 through 19

Early Findings: Early data show a reduction in teenage pregnancy as well as in school suspension and drop-out rates. The volunteering and classroom curriculum appear to be working although greater site volunteer hours and older students were associated with more positive outcomes.

POSTPONING SEXUAL INVOLVEMENT

Approach: Abstinence and Delayed Sexual Initiation

Description: The Postponing Sexual Involvement Curriculum, developed by the Emory University School of Medicine and Grady Memorial Hospital Teen Services Program, provides teens with the skills they need to resist peer pressure and early sexual involvement. The curriculum offers a clear message that favors abstinence and postponing sexual involvement, but also provides information about contraception. Skill-building exercises conducted by slightly older peer educators are key elements of the program.

Goals of the Program: The program provides youth with basic factual information and decision-making skills related to reproductive health. Teenagers in the program gain skills to deal with social and peer pressures that lead them into early sexual involvement.

Location: Atlanta, GA and other sites nation-wide.

Population Served: Youth ages 13 to 14

Early Findings: Compared to non-participants, a significantly smaller proportion of youth participating in the program reported being sexually active by both the 12- and 18-month follow-up periods, even though a slightly higher proportion of the participants had been sexually active before receiving the program's curriculum. The effect on delayed first sexual activity was true for both male and female participants. The impact on delayed sexual activity among females was particularly strong. In addition, the evaluation also found higher contraceptive use among those program participants who were sexually active.

I HAVE A FUTURE

Approach: Life Options and Opportunity Development

Description: "I Have A Future" is a community-based intervention that uses a comprehensive set of activities to expand life options for high-risk youth living in public housing projects. The focus of the program is on abstinence, community, and self-esteem. The three parts of the program include: equipping adolescents with the basic information they need about health, human sexuality, and drug and alcohol use; providing a comprehensive array of adolescent health services, with a focus on abstinence and a very strong emphasis on parental and community involvement; and assisting young people to enhance their life-options through activities that improve their job skills, self-reliance, values, and self-esteem.

Goals of the Program:

- Developing a replicable community-based, life-enhancement program that promotes a significant reduction in the incidence of early pregnancy and child bearing among high-risk adolescents;

- Improving knowledge, attitudes and behaviors related to personal health and human sexuality; and,

- Enhancing the ability of high-risk adolescents to overcome environmental barriers to attaining the skills necessary to pursue meaningful employment and educational opportunities with the promise of upward mobility.

Location: Public housing projects in Nashville, TN

Population Served: Youth ages 10 through 17

Early Findings: Those who participated in the program had fewer pregnancies, higher self esteem, fewer self-reports of delinquent behaviors, and a greater sense of a promising future. Preliminary analyses of the I Have A Future Program have also found positive effects on intermediate outcomes such as pro-social attitudes, sexual and contraceptive knowledge, self-esteem, perceived life options, and psychosocial maturity, when comparing the active participants to the comparison group of youth from two other public housing projects.

QUANTUM OPPORTUNITIES PROGRAM

Approach: Life Options and Opportunity Development

Description: The Quantum Opportunities Program (QOP), a four-year demonstration program launched in 1989, was designed to test the ability of community-based organizations to improve the lives of low-income high school students. The project used Opportunities Industrial Centers in five communities to deliver an intensive package of services to youth during the four years of high school. Services included educational activities, community service activities, and development activities to help youth learn more about health issues, arts, careers and college planning.

QOP was a relatively small national demonstration program. At each site, there were 50 students--25 randomly assigned to the project and 25 to a control group. The young people received small stipends for participating in and completing approved activities. The program also established accrual accounts to collect matching funds that youth could use for additional training or education after they graduated from high school. Staff members were also given financial incentives to meet the program's participation goals.

The Ford Foundation and the Department of Labor are currently funding replications of the program.

Goals of the Program: To test the ability of community-based organizations to "foster achievement of academics and social competence among high school students from families receiving public assistance."

Location: Philadelphia, PA; Oklahoma City, OK; San Antonio, TX; Saginaw, MI; and Milwaukee, WI. (Milwaukee was later dropped from the study)

Population Served: Students entering the 9th grade

Early Findings: QOP made significant improvements in the lives of participating youth over a two-year period. Results compiled one year after the program was completed show significant differences between QOP participants and control group members. Specifically, QOP members were more likely to be high school graduates, more likely to be enrolled in secondary schools, less likely to be high school dropouts, and less likely to have children. They were also more likely to be involved in community service, to be more hopeful about the future, and more likely to consider their lives a success.

APPENDIX IV: PROGRAM CONTACTS AND OTHER RESOURCES

HHS Programs

Centers for Disease Control and Prevention
Community Partnership Programs for the Prevention of Teen Pregnancy
For information call: 404-639-3286

Office of Population Affairs
Adolescent Family Life Program and the Title X Family Planning Program
For information call: 301-594-4000

Health Resources and Services Administration
Healthy Start; Community and Migrant Health Centers;
Healthy Schools, Healthy Communities; and Maternal and Child Health Block Grant
For information call: 301-443-3376

Administration for Children and Families
Youth Programs (Runaway and Homeless Youth, Community Schools, etc.)
For information call: 202-401-9215

Substance Abuse and Mental Health Services Administration
Drug Treatment and Prevention Programs
For information call: 301-443-8956

Health Care Financing Administration
Medicaid Bureau
For information call: 410-786-3393

Enterprise Zones/Economic Communities
For information call: 202-401-3951

National Institute of Child Health and Human Development
Add HEALTH and the National Survey of Adolescent Males
For information call: 301-496-5133

National Center for Health Statistics
National Survey of Family Growth and Monthly/Semi-Annual Vital Statistics Reports
For information call: 301-436-7551

Hotlines and Referral Numbers

National AIDS Hotline (CDC)
1-800-342-AIDS (English)
1-800-344-SIDA (Spanish)
1-800-243-7889 (TDD)

Sexually Transmitted Diseases Hotline (CDC)
1-800-227-8922

Office of Population Affairs Clearinghouse (OPA)
301-654-6190
301-215-7731 (to order by facsimile)

National Center On Child Abuse and Neglect (ACF)
703-385-7565 or 800-394-3366

National Clearinghouse on Families and Youth (ACF)
301-608-8098
301-608-8721 (to order by facsimile)

National Clearinghouse on Alcohol and Drug Information (SAMHSA)
1-800-729-6686 (English)
1-800-487-4889 (TDD)

HHS On-Line

HHS Home Page
Access to consumer information on a variety of issues and links to specific HHS agencies.
http://www.os.dhhs.gov

YouthInfo
Latest information on America's teenagers including reports and publications, resources for parents, statistical profiles, and links to related federal and private organization websites.
http://youth.os.dhhs.gov

Girl Power!
Materials, information, and products for girls, parents, and caring adults.
http://www.health.org/gpower

Research Reports

Beginning Too Soon: Adolescent Sexual Behavior, Pregnancy, and Parenthood. A 1995 two-volume report reviewing recent research and describing interventions and evaluations. Written by Kristin Moore, Brent Miller, Barbara Sugland, Donna Ruanne Morrison, Connie Blumenthal, Dana Glei, and Nancy Snyder of Child Trends, Inc. for the Office of the Assistant Secretary for Planning and Evaluation (ASPE) in the U.S. Department of Health and Human Services. Copies available from Child Trends at 202-362-5533. Also available at the Internet address http://aspe.os.dhhs.gov

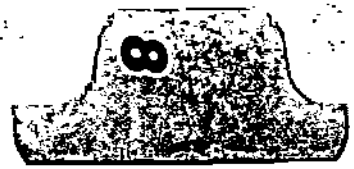
Trends in the Well-Being of America's Children and Youth. A 1996 report written by Child Trends, Inc. for the Office of the Assistant Secretary for Planning and Evaluation (ASPE) in the U.S. Department of Health and Human Services. Copies available by faxing requests to Child Trends at 202-362-5533 or ASPE at 202-690-5514. Also available at the Internet address http://aspe.os.dhhs.gov

Report to Congress on Out-of-Wedlock Childbearing. A 1995 report prepared by the U.S. Department of Health and Human Services and university researchers that provides a comprehensive overview of nonmarital childbearing among women of all ages. Copies available by faxing requests to ASPE at 202-690-5514 or to Stephanie Ventura, NCHS, at 301-436-7066 (DHHS Pub. No. (PHS) 95-1257). Also available at the Internet address http://www.cdc.gov/nchswww/products/pubs/pubd/other/miscpub/miscpub.htm

The Best Intentions: Unintended Pregnancy and the Well-Being of Children and Families. A 1995 report by the Institute of Medicine. Copies available from the National Academy Press at 800-624-6242.

Great Transitions: Preparing Adolescents for a New Century. The 1995 concluding report of the Carnegie Council on Adolescent Development funded by the Carnegie Corporation of New York. Copies available from the Carnegie Council on Adolescent Development at 202-429-7979.

Sex and America's Teenagers. A 1994 report by the Alan Guttmacher Institute. Contact the Alan Guttmacher Institute at 202-296-4012.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Welfare Reform Resource Packet
Section VIII

The National Campaign to Prevent Teen Pregnancy
March 1997

Next Steps and Best Bets:

Approaches to Preventing Adolescent Childbearing

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Next Steps and Best Bets:
Approaches to Preventing Adolescent Childbearing

INTRODUCTION

Rates of adolescent childbearing in the United States are two to ten times higher than in comparable industrialized democracies. Moreover despite several decades of effort to prevent adolescent pregnancy, little progress has been made. The teen birth rate among school-age adolescents 15-17 was essentially the same in 1993 as it was in 1970 -- 39 births per 1,000 females aged 15-17. What can policy makers, program providers, and families do to reduce the incidence of adolescent pregnancy in the US?

Although many families do not need assistance or information from organized programs, many other families want or need information and/or services that would help their children to postpone sex, pregnancy, and parenthood. The foeus of this paper is to identify program and service options that show promise for reducing the incidence of adolescent pregnancy. Unfortunately, there is a dearth of programs that have been documented to have substantial and lasting effects on adolescent sex, pregnancy or parenthood. Thus, we cannot simply pull down from the shelf a sure fire service program or curricula demonstrated to have large, positive sustained impacts. Rather, there is a need to pause before implementing a new generation of programs, to consider what has been learned and the most promising directions for future interventions.

Much has been learned over the past several decades that can direct and inform the next generation of interventions. In this paper, we outline a set of 11 principles derived from available research and from program experience that provide a starting point for designing the next set of interventions. These principles address topics that range from the focus of intervention efforts to the targets of interventions, and from the characteristics of programs to the need for evaluation.

PRINCIPLES

1 - Base intervention programs on the findings of basic research and previous program evaluation studies.
2 - Combine positive and negative sanctions to affect behavior.
3 - For at-risk youth from disadvantaged or dysfunctional families, interventions need to start before puberty.
4 - To create effective programs and avoid destructive controversy, work with families and communities to develop and implement programs.

5 - Recognize that varied groups need varied degrees of intervention, ranging from no intervention to comprehensive, long-term programs.

6 - Recognize cultural diversity in the design and implementation of programs.

7 - Recognize that age differences affect both the needs of children and adolescents and the characteristics of an effective program.

8 - Recognize that for many teens sexual risk-taking is one of several related forms of risk-taking, such as substance use and delinquency.

9 - Build programs that recognize the role that non-voluntary sex plays in the early initiation of sexual activity, pregnancy and parenthood.

10 - Involve males and recognize that many male partners of adolescent females are not themselves teenagers.

11 - Conduct process evaluations for all organized programs and, where warranted, conduct rigorous impact evaluations.

In the following pages, we elaborate upon each of the eleven points. In a subsequent section, we outline several specific and distinct program intervention and evaluation strategies that might be implemented as next steps.

1. Base intervention programs on the findings of basic research and previous program evaluation studies.

Unfortunately, it is not possible to identify very many adolescent pregnancy prevention programs that have actually documented substantial success in preventing pregnancy or parenthood. Most of the interventions that have been rigorously evaluated have been found to have only small or no effects. A recent pair of reports suggests an explanation for this lack of progress.[1] The first report reviews hundreds of research studies and identifies four broad factors that consistently predict early parenthood: poverty, early school failure, early behavior problems, and family problems and dysfunction. The second report describes a variety of intervention programs, and finds that only a minority of these programs address these four basic risk factors. Even among the programs that focus on these underlying factors, few programs start early or take on several risk factors at the same time. Rather, programs tend to focus narrowly on a single aspect of prevention; efforts tend to be brief and superficial; and interventions are provided too late to have major impacts among at-risk populations. Thus, several weeks of sex education in high school would be a typical intervention: too late, too superficial and too narrow.

Moore, Kristin A., Brent C. Miller, Dana Glei and Donna Ruane Morrison. 1995. "Adolescent Sex, Contraception, and Childbearing: A Review of Recent Research." Washington, DC: Child Trends, Inc.

Moore, Kristin A., Barbara W. Sugland, Connie Blumenthal, Dana Glei and Nancy Snyder. "Adolescent Pregnancy Prevention Programs: Interventions and Evaluations" Washington, DC: Child Trends, Inc.

The juxtaposition across the two reviews strongly suggests that one reason few interventions have been successful is that they have overlooked the underlying factors that predict early childbearing in the contemporary United States -- poverty, early school failure, early behavior problems, and family problems (Moore, Miller, Glei and Morrison. 1995). Even when strong comprehensive programs address the factors that predict teenage childbearing, they are rarely rigorously evaluated, so it is not possible at this point in time to demonstrate their effectiveness.

Programs are needed that address the underlying factors that predict teenage childbearing.

Poverty. Economic disadvantage is strongly linked to teenage parenthood. Among United States teens, 38 percent are poor or low income. However, 85 percent of all nonmarital teen births occur to poor or near-poor teens (that is, teens whose families have incomes below 200 percent of poverty) (Alan Guttmacher Institute, 1994). Studies have linked both family-level disadvantages and neighborhood-level disadvantages with a higher risk of early childbearing. For example, teens from low income families and families that receive welfare are more likely to have a birth. On the other hand, better employment opportunities have been found associated with a lower probability of a teen birth.

School Failure. Students who are behind grade, who have low levels of academic achievement, who obtain poor grades or have low achievement test scores, and adolescents who have dropped out of school are two to five times more likely to have a child by the time they would complete high school.

Behavior Problems. Similarly, teens who have school behavior problems, who smoke, drink or use drugs, and who engage in delinquent activities are all much more likely to become teen parents.

Family Problems. Varied aspects of family functioning have been linked to the risk of pregnancy among adolescents. For example, teens with supportive family relationships, who attend church frequently, who live with both of their parents, and who have better educated parents are less likely to initiate sex at a young age. On the other hand, youth from families which do not monitor their children, which cannot or do not communicate with them, which do not provide strong values and goals for the future, and which fail to help teens deal with media and peer influences are much more likely to become parents as adolescents. Finally, youth who are subjected to non-voluntary sex are at a much higher risk of adolescent parenthood.

Poverty, family dysfunction, early behavior problems and difficulty in school represent very substantial problems, and any effective intervention would have to be long term and profound. Consequently, few program designers have been willing to initiate a comprehensive intervention among pre-schoolers or children in elementary school in the hope that pregnancy rates will be lower a decade or more later. However, such programs have been initiated for other purposes, e.g., Head Start programs and Head Start-to-school transition programs; two

generation programs such as the Comprehensive Child Development Projects; housing and neighborhood development programs, such as Moving to Opportunity; and a variety of mentoring and tutoring programs. Hence, rather than starting from scratch, program designers might augment or extend evaluations of such programs to examine outcomes during adolescence. Thus, if a tutoring and mentoring program is planned for grades two through four, ways to extend the program through junior high or even high school might be planned. If it is not possible to extend program services, at the very least, the long-term impacts of a program offered in the early elementary grades might be tracked.

If resources were available, the ideal intervention effort for a high-risk disadvantaged population would be a long-term program that was initiated among pre-school children to help parents become economically independent and to leave poverty; to help parents learn parenting skills if needed and to help parents become involved in the process of their child's education; to help children master the essential tasks of early elementary school such as reading and basic arithmetic; and to help children learn behavior patterns that are compatible with school success and that reduce the risk of delinquency in the later elementary grades and junior high school. Children would have to be randomly assigned and followed for more than a decade to produce the kind of impact results that would demonstrate whether this approach significantly reduces rates of adolescent parenthood. Such an endeavor would be quite expensive; but, based on the accumulated research, this is the kind of approach that needs to be tested.

2 - Combine positive and negative sanctions to affect behavior.

Results of numerous evaluation studies indicate that, when programs are not mandatory, only a small number of the persons who would benefit from the program participate actively and consistently over a sustained period of time (Gueron and Pauly, 1994; Maynard, 1995). Moreover, even among volunteers for a program, those adolescents selected for a program do not participate consistently or participate in all program offerings (Quint et al., 1994). Hence, there is real reason to apply strong negative sanctions to bring eligible participants to actually participate (Maynard, 1995). On the other hand, a large body of scientific research indicates that positive reinforcement is more effective in producing internalized behavior than is punishment (Berger, 1983; Amato, 1989).

These separate bodies of research and program experience indicate that effective programs should combine negative sanctions with positive sanctions, much as an effeetive family combines rewards and punishments in the socialization of its children.

Particularly among children and adolescents from disadvantaged backgrounds, substantial impediments exist that undermine program participation (Goodson et al, 1991). There may be distrust for program providers, who may be from a different cultural group or social class. There may be access problems, such as transportation difficulties or financial constraints. Family and

peers may not be supportive of participation, and may even actively discourage participation. For all of these reasons, participation might be encouraged by a combination of "carrots and sticks."

However, negative sanctions may be inappropriate for young children and for families who are not (yet) experiencing clear difficulty. Presumably, this is one reason program providers seek to place programs in schools, where all children will inevitably be exposed to program offerings. However, if the services offered are not appropriate to the school curriculum, or funds are not available to provide services to all children, other ways of increasing participation need to be developed. Requiring participation of all eligible children may be warranted in some instances, e.g., if a school principal refers children who are demonstrating serious behavior, learning or emotional problems. Alternatively, strong positive reinforcement (rewards and inducements) may be necessary to cajole participation; such inducements may need to be combined with personal follow-up and services that make participation feasible, such as free transportation and snacks.

3 - For at-risk youth from disadvantaged or dysfunctional families, interventions need to start before puberty.

Research studies regularly find that negative behavior patterns among adolescents have their origins in childhood, often early childhood (National Commission on Children, 1991; Hahn, 1995). Yet, programs to prevent adolescent pregnancy often begin in high school, when established patterns are difficult to change. Indeed, many disadvantaged and otherwise at-risk teens have initiated sex, developed erratic patterns of contraceptive use, and experienced pregnancy before reaching high school (Moore, Miller et al., 1995).

We propose the following axiom: the greater the risk of adolescent pregnancy, the earlier interventions need to be implemented. For college-bound teens from stable, supportive families, sex education in the sophomore year of high school may be quite sufficient, as these youth are unlikely to have already initiated sex and are unlikely to risk a bright future by becoming a teen parent. For children from families where parents themselves had difficulty in school or who have had problems with crime or delinquency, and who are experiencing economic hardship and disorganization, interventions cannot be delayed. For children from at-risk backgrounds, high quality pre-school interventions with follow-through into elementary school may be particularly effective.

4 - To create effective programs and avoid destructive controversy, work with families and communities to develop and implement programs.

Providers often find that programs to prevent adolescent pregnancy, especially those that deal directly with sex, such as sex education and contraceptive services, face opposition from special interest groups that may be very small but vocal, or large and well-organized. Less recognized are the concerns of the larger body of parents and community members who are simultaneously supportive but nervous. Being generally unorganized, such ambivalent groups are often simply overlooked. In either case, communication and discussion with stakeholders prior to the initiation of a program can help to diffuse such opposition and turn it into constructive energy.

There is no simple recipe that will be helpful in every community; but certain steps are necessary in most instances. First, program planners need to identify the persons or groups who should be involved. Adolescents to be served should be a part of the planning process, as should potential funders, parents, and employees in service organizations. Community members representing religious groups, the press, and the business community might also be invited to participate. Second, having identified representatives of concerned constituencies, planners need to involve them in defining the problem. Most communities will define early sexual initiation as problematic, while others will view the problem as early pregnancy. A few communities will define the problem in terms of preventing births to teens or preventing nonmarital births; but preventing pregnancy is more likely to be achieve consensus. Third, having identified the problem, an approach for addressing the problem needs to be agreed upon. Again, some approaches will be less controversial than others. For example, providing mentors and tutors to at-risk adolescents will be controversial in fewer communities than providing contraceptive and abortion services to adolescents. Controversial programs particularly require community support. Next, target populations need to be defined. Are parents the focus? Both parents and children? Males as well as females? What ages will be served?

Going through this process with a broad representation of community members should not only reduce opposition, it should improve the quality of the program that is designed. It may also generate some of the long-term financial and social support that will help sustain the program over time.

5 - Recognize that varied groups need varied degrees of intervention, ranging from no intervention to comprehensive, long-term programs.

There are several reasons to concentrate resources on those youth most at risk. One is the shortage of available resources. Comprehensive programs that are long-term, that provide the incentives necessary to generate sustained participation, and that provide follow-up for youth who drop by the wayside are expensive. Sufficient financial resources are simply not available to provide comprehensive long-term services to all or even to very many young persons.

However, if some youth only need training to resist peer pressure and media influences, there is no need to provide more expensive programs to such youth.

A second reason to concentrate resources on those youth most at risk is that comprehensive programs can generate political and social opposition. Sweeping statements implying that all youth need to be socialized by paid professionals in organized programs may infuriate some parents and non-parents who feel strongly that families need to retain or regain control of the socialization of their own children. We suspect that one of the common sources of opposition to programs to prevent adolescent pregnancy is parents with strongly-held values about childrearing who do not welcome the intrusion of outside forces. While such persons are not inevitably effective parents, we suspect that by and large the children of intensely involved parents are not in need of comprehensive program services. There is no point to inviting unnecessary controversy. Rather, advocates and program planners should be temperate in their statements and focussed in their interventions, providing minimal levels of intervention where warranted and providing comprehensive intervention programs only when the need is great, e.g., for children experiencing multiple risks, such as school failure, behavior problems, and family dysfunction.

6 - Recognize cultural diversity in the design and implementation of programs.

Addressing issues of cultural diversity or cultural competence implies recognizing differences in values, roles, and attitudes about sexuality, contraception and childbearing as they vary across different social and ethnic sub-groups. Incorporating recognition of these differences into programs and curricula may help attract and involve potential participants, secure community support, and increase the effectiveness of programs (Office of Technology Assessment, 1991). Unfortunately, at present, the admonition to be sensitive to cultural differences represents a recommendation that is not backed up with much research. Remarkably little work has been done examining the potentially profound implications of a commitment to showing recognition and respect to the many and varied cultural groups in the United States.

Some Afro-centric programs have evolved, but evaluations assessing the effectiveness of this approach or of variants of this approach have not been rigorously evaluated (Moore, Sugland et al., 1995). Similarly, some programs addressing Hispanic sub-groups have been identified; but rigorous evaluations have not been found. Often such approaches are operating "on a shoe string" and do not even have a written curriculum or a clearly specified model that could be evaluated or even shared with another interested group. Approaches directed at Asians and Native Americans do not appear in the literature. Clearly, considerably more work is needed to put substance into this principle.

7 - Recognize that age differences affect both the needs of children and adolescents and the characteristics of an effective program.

The years of adolescence encompass a time of enormous development and change (Feldman and Elliot, 1990). Program planners often speak of "teen pregnancy," without specifying whether they are referring to young adolescents, high school students, or youth in their late teens. This casualness undoubtedly is sometimes another factor sparking opposition to programs, as speakers and listeners have different images of the target population. This lack of precision probably also undermines the effectiveness of programs as well, if the substance and delivery are not developmentally appropriate for the target population. For example, no responsible program would support and encourage middle school students to engage in sexual activity; early adolescents aged 12, 13, and 14 are quite universally agreed to be too young to initiate sex. However, by the late teens, most adults accept (even if they do not approve) the need for contraceptive services for teens who have become sexually active. Numerous other age-related differences distinguish the content and context appropriate for younger and older adolescents; but the implications of such differences for programs to prevent adolescent pregnancy have not been fully considered.

Research has begun to distinguish the varied cognitive, social, and emotional stages that children pass through on their way to adulthood. While the pace and timing of these transitions vary, there are broad patterns that are increasingly be recognized by researchers and educators. (See, for example, the recent Carnegie report "Great Transitions," which makes the creation of developmentally appropriate schools one of its primary recommendations.) Programs to prevent adolescent pregnancy need to be similarly attuned to the varied developmental needs of children as they move through the elementary grades into middle school or junior high and then through senior high school.

8 - Recognize that for many teens sexual risk-taking is one of several related forms of risk-taking, such as substance use and delinquency.

Numerous studies have found that early risk-taking, such as smoking cigarettes, using alcohol, using illicit drugs, and varied forms of delinquency are associated with an elevated likelihood of adolescent pregnancy (see Moore, Miller et al., 1995, for a recent review). Moreover, reviews across domains indicate that these varied forms of adolescent problem behaviors share common antecedents. For example, early school problems, poverty, and dysfunctional families increase the risk of substance abuse and behavior problems, as well as early sexual activity and pregnancy (Mendel, 1995). Such findings strongly suggest that early interventions that reduce the risk of one type of problem behavior will reduce the risk of other problem behaviors as well. Indeed, results from the Perry Pre-School program indicate just such effects: children in the experimental group who were exposed to a high quality pre-school intervention were less likely to become teen parents and also were less likely to engage in delinquent and criminal behavior (Weikert, 1989).

9 - Build programs that recognize the role that non-voluntary sex plays in the initiation of sexual activity, pregnancy and parenthood.

In the last several years, there has been an increasing recognition that sexual initiation in early adolescence is largely non-voluntary. Indeed, among girls having sex at age 15 or younger, 60 percent report that their first intercourse was non-voluntary (Moore, Nord and Peterson, 1989; Alan Guttmacher Institute, 1994). Even in middle and later adolescence (and even among adults), non-voluntary sex is a problem (Michael et al., 1994).

As noted above, not many prevention programs have been documented to have strong impacts. This is particularly true with regard to non-voluntary sex. When, to whom, and how to target efforts to prevent coercive sex is not currently known (though see Ounce of Prevention Fund, 1988 for suggestions). Sex education courses for children and younger adolescents that provide sensitive coverage of the issue of sexual abuse may provide an opportunity for children to learn resistance skills and/or to report that they have been abused. One reason to begin sex education at an early age, indeed, is to empower children to avoid unwanted personal attention and to help children realize that they can speak to an adult and obtain help.

Obviously, coercive sex among pre-adolescents and young adolescents is not going to be resolved by sex education given in high school. High school students should nevertheless discuss this issue because non-voluntary sex is a problem for many high school age youth. Also, such classes may provide victims an opportunity to identify and report their own victimization and seek help. Moreover, many of these students will in the next decade be the parents of young children who are susceptible to abuse, and they need to be alerted to the possibility.

Ways to reach adult men to prevent the sexual exploitation of children and young adolescents are beyond the scope of this paper. In particular, ways to reach extremely disturbed individuals are out of the range of the organized prevention programs discussed here. However, anecdotal evidence indicates that some males who would not be clinically defined as emotionally disturbed or psychologically ill sometimes view forced sex as legitimate, as masculine or as attractive behavior. It is possible that discussions in sex education classes of how devastating abuse can be for the victim may deter some young men who hold such attitudes from forcing sex on females. Alternatively, realization that coercive sex is illegal and punishable may deter some young men from pressing or forcing sexual intercourse on females. In addition, discussions of movies and songs that legitimize violence against women may help males think through the implications of forcing sex on a partner who is not willing. Inevitably, however, interventions aimed at preventing sexual abuse of adolescents and children will have to go beyond discussions and counseling to the challenge of helping victims to press charges.

In summary, the topic of sexual abuse should be introduced in an age appropriate manner in sex education classes for children and for adolescents. Responsible media coverage to reach adults and the prosecution of perpetrators are also necessary.

10 - Involve males and recognize that many male partners of adolescent females are not themselves teenagers.

Only during the past several years have research and policy discussions come to focus on males. Even now, however, most of the focus is on males who are already fathers, recognizing that perhaps two-thirds of the babies born to teenagers are fathered by men who are twenty or older (Landry & Forrest, 1995) and that a fifth of the fathers are six or more years older than the teen mother (Alan Guttmacher Institute, 1994; Landry and Forrest, 1995). A second focus on males has begun to develop in recognition of the role of non-voluntary sex in adolescent pregnancy, as discussed above. An additional focus is needed to address the developmental and informational needs of adolescent males and young adult males who are not already fathers and who are not coercive.

Programs can deal with males either directly or indirectly. Indirect approaches would involve working with girls to deal with ignorance, pressure or aggression from male partners. Alternatively, programs can begin working directly with boys directly at a young age, helping boys to succeed in school, to develop sources of pride and accomplishment other than sexual conquest, and to help adolescent males appreciate the implications of pregnancy for young women and for children. Programs should also emphasize the responsibilities of fatherhood, discussing both the financial and the emotional support needed by children and mothers. Enforcing child support among males who are fathers should not be the only direction for public policy toward males; youth development approaches represent a positive, preventive approach that can help males adopt more positive ways of achieving manhood than early fatherhood or fathering a child by an adolescent female.

11-Conduct process evaluations for all organized programs and, where warranted, conduct rigorous impact evaluations.

There are, broadly speaking, two kinds of evaluations -- process evaluations and impact evaluations. Process evaluations help program designers know whether intended services are being delivered to whom and in what amounts. Every program should have some kind of management information system (MIS) that records basic demographic information and basic program data about attendance over time. More sophisticated MIS systems will record information about how much a person participates in a given service or activity, about referrals and services received elsewhere, and about services that were not available for the eligible person. A process evaluation cannot provide information on whether a program has had impacts on the life outcomes of eligible participants, but it provides crucial information about whether any program really exists and what the program consists of. A process evaluation can identify factors that undermine the effectiveness of a program. In addition, a process evaluation provides crucial input information that can be used in an impact evaluation to understand why a program did or did not have an impact.

An impact evaluation represents a major investment but it provides crucial information. As we have discussed in detail elsewhere (Moore, Sugland et al, 1995; Card, 1988), the only evaluation design that can provide information about the effect of a given program with any certainty is an experimental evaluation, specifically, an experiment in which eligible entities are randomly assigned to be in the experimental group which gets the treatment or the control group which does not get the treatment. Random assignment may focus on individuals, couples or families. If they are carefully implemented, quasi-experimental designs may randomly assign classrooms, agencies, sites, or schools; but usually quasi-experimental designs do not provide the certainty with regard to impacts that is available from a strictly experimental design. One of the main reasons we know so little about what approaches are effective ways to prevent adolescent pregnancy is the lack of rigorous experimental studies.

While virtually every program should incorporate some kind of process evaluation, not every program needs or merits an impact evaluation. Such a major and expensive evaluation strategy is appropriate only for the most promising approaches, where there is a carefully designed and well-developed program, where the process evaluation indicates that services are being delivered, and where random assignment is feasible.

BEST BETS

Having discussed a set of somewhat broad principles, in this section we seek to be relatively concrete, describing several ideas for interventions that build on the available knowledge base. These represent some of our "best bets" for program development. It is not an exhaustive list, and others will undoubtedly have creative additions.

Early Childhood Interventions

As noted in the discussion of our first principle, numerous studies indicate that the risk factors for adolescent pregnancy develop years prior to puberty, during childhood (Moore, Miller et al., 1995). Early school failure and early behavior problems are consistent predictors of pregnancy risk. Programs that enhance children's school readiness and assist with the transition into formal schooling have the potential to improve school success and behavior. Programs that involve parents or provide parent education have the potential to reduce family dysfunction, another of the key predictors of adolescent pregnancy. In addition, if such programs are provided to low-income families, they have the potential to increase parents' earnings and to provide greater opportunity to low-income children, thus addressing poverty, another key predictor of adolescent pregnancy, but one which is very difficult and expensive to alter. Another reason to highlight early childhood education is that one of the few programs to have documented long-term impacts on the incidence of adolescent pregnancy is the Perry Pre-School Program, a high-quality early intervention that served pre-school children and their parents (Weikert, 1989). Thus, the available evidence points to strengthening early childhood education and child care as possible ways to reduce adolescent pregnancy a decade or more later.

Early childhood education and child care are frequently recommended as services that can enable parents to become employed while enhancing the development of young children. They are not generally viewed, however, as high priority strategies for preventing adolescent pregnancy, and it is unlikely that funders will support the creation of a new early childhood program to investigate whether it eventually affects sexual and fertility behavior. In addition, there isn't time to wait a decade to see whether impacts on fertility occur.

Rather than funding a new intervention, we recommend identifying one or more ongoing or recently completed early childhood interventions. Programs must be high quality; they must have an experimental design; they must involve a thousand or more children (to permit analyses of sub-groups such as gender sub-groups); and they must have high retention rates and complete tracking data to support long-term follow-up. Funds would be needed to support long-term follow-up of families, data collection, and analysis. Programs that served pre-schoolers in the mid-1980s or the early 1980s could yield impact information rather soon regarding impacts on adolescent outcomes such as sexual activity and parenthood.

Early Adolescent Interventions

Our third principle recommends that initiatives for at-risk youth begin prior to puberty. However, at present, few such efforts have been implemented. Indeed, an important developmental period that is often overlooked are the years from approximately ten through fourteen (Carnegie Council on Adolescent Development, 1995). Many opportunities exist for promoting the development of children as they move into puberty and adolescence. In particular, children who are having difficulty managing their school work and/or their behavior in school can be identified for youth development activities, such as tutoring, mentoring, counseling, summer programs, Scouts and/or a sports team. Efforts to engage and educate parents of young at-risk adolescents seem particularly important, and can involve parent education, counseling, parent support groups, and regular meetings between school staff and parents. Following the lead of Teen Outreach, programs might also consider small group approaches that involve adolescents in volunteer service activities. Often overlooked are programs embedded within church settings, yet such programs are likely to have the trust of parents and to provide culturally and morally acceptable messages.

The literature does not provide specific advice regarding effective interventions during middle childhood that will reduce the risk of adolescent pregnancy. The first task seems to be to extend the evaluation studies being conducted among existing generic youth development programs focussed on this age group and examine whether the programs have impacts on teens' sexual and fertility behavior either overall or among specific sub-groups, such as males or females. Next, if impacts are found, it is important to identify those components of programs that are associated with a reduction of risk, and to experiment with augmentations such as sex and family life education, that might enhance the impact of a youth development approach.

Programs that focus on a sub-set of youth face difficult issues in identifying the population to be served and in assuring sufficient involvement of youth over a lengthy period of time. High absenteeism, failing grades and behavior problems all represent markers of students who could benefit from intensive intervention. It is virtually axiomatic that minimal inputs will have minimal impacts. Yet resources are lacking to provide comprehensive services to all youth who have a single risk factor. Moreover, participation in voluntary programs may be least consistent among those youth who are most in need. As posited in our second principle, a combination of positive and negative sanctions may increase participation and behavior change.

Ways to identify youth who can benefit from such approaches, to engage such youth, and to keep such youth involved over time will require creative grass roots strategies. Most of all, it will require committed personnel, such as many of the youth recruited to the Americorps program. At this time, however, the clear initial task is to rigorously examine whether such youth development approaches implemented during the middle childhood years can significantly reduce the incidence of pregnancy during adolescence.

"Working Class" High School Youth

Most intervention programs target highly at-risk youth or families, such as those who receive welfare, high school dropouts, or youth who are seen as coming from "underclass" families. Much less attention is focussed on the youth who have somewhat higher social and economic prospects, yet who are not college-bound. Nevertheless, working class youth are going to face substantial obstacles toward establishing stable careers and economically viable families. Economic and occupational success have become substantially more difficult for youth who terminate their education with a high school degree (Farley, 1995). Numerous studies document that very few of the females who become teen mothers and the males who father children to teen females obtain a college education (Brien & Willis, 1995; Moore et al., 1995; Hotz et al., 1995).

Although policy efforts are generally focussed on delaying high school-age childbearing, the hard fact is that in a modern industrial economy, childbearing in the late teens and early twenties is also too early. Thus, even among women aged 20-24, 61 percent of all pregnancies are described by the woman as unintended at conception (Forrest, 1994). Among nineteen-year-olds, 63 percent of all births occur outside of marriage, as do 42 percent of births among women aged 20-24. How can older teens completing high school and recent high school graduates be assisted to delay pregnancy, particularly unintended pregnancy?

In keeping with our fifth principle, approaches should be developed that recognize the intermediate level of need among most youth who are high school graduates. Extremely expensive and comprehensive programs are less generally needed. However, further experimental work is needed to examine the kinds of programs needed by these youth during their high school years. Clear and complete sex education that covers both abstinence and methods of contraception seems essential for youth who do not aspire or expect to attend college,

as the vast majority of these teens will have sex before they turn twenty. The role of the media -- including television, music, video games, movies, and magazines -- in shaping decisions and behavior might be discussed. In particular, as noted above, classes might discuss the role of coercion in sexual relationships and help both males and females learn strategies to avoid having unwanted sexual experiences and ways to enforce the use of contraception to prevent unwanted pregnancies. An experimental study might explore the incremental value of repeated exposure to sex education, to longer versus short coverage, to single gender versus co-educational classes, and to individual counseling as an augmentation to classroom coverage.

Parent Empowerment

Dysfunctional families and families lacking the motivation, support or skills needed to be effective parents are consistent precursors of childhood problems, as well as adolescent sexual risk-taking and early pregnancy (Moore, Miller et al., 1995). Consequently, numerous programs have focussed on ways to enhance parenting. During the past decade, explicitly two generation approaches have expanded (Smith, 1993), as policy makers and program providers have sought to enhance the wellbeing of both parents and children at once. To date, evidence of impacts has been mixed (Zaslow et al., 1995). Nevertheless, the literature establishing the effects of parent characteristics and wellbeing upon the development of children is so consistent and compelling that the response to weak results must be to consider more carefully the types, strength, duration, and involvement of these interventions. How much parent education do participants actually receive? How long are home visits provided? Over what time period are participants actively involved in the program? What follow-up is provided? How central to the concerns of the parents are the needs that are addressed in available programs? Are program providers trusted? Are essential services missing?

Supporting parents and enhancing their skills as parents represents an intrinsically worthwhile activity. Moreover, as implied by our fourth principle, working with families is less controversial then many other approaches. In this time of constrained budgets, it will be necessary, of course, to demonstrate that relatively costly program approaches do in fact enhance parenting and child development. With respect to the goal of reducing adolescent pregnancy, long-term follow-up of such interventions is needed to ascertain whether sexual and fertility impacts occur during adolescence. If impacts are found, researchers should identify the pathways by which impacts are transmitted. Do parents become more actively involved in monitoring the activities of their children? Do they engage in greater communication and education? Do they provide more social, emotional and academic support to their children?

Programs seeking to enhance parent skills and involvement need to focus explicit and significant attention on involving fathers. A number of programs directed at fathers are being developed across the country, but as yet no evaluations have assessed whether such programs have impacts on adolescent sexual and fertility behavior. Many commentators view the dilution of the influence of the biological father on their sons and on their daughters as critical factors in a wide range of adolescent problems. Ways to re-engage fathers require greater attention. Beyond

the biological father, identifying ways to involve other father figures such as grandfathers, step-fathers, uncles, and mentors need to be developed and evaluated.

Enterprise/Empowerment Approaches at the Community Level

Based on available research (as recommended in our first principle) one of the most compelling hypotheses for the considerably higher rates of adolescent childbearing among disadvantaged groups is the opportunity costs hypothesis. This perspective posits that adolescents who enjoy good educational and economic opportunities delay sex and/or parenthood in order to pursue their opportunities. Correspondingly, adolescents who lack positive future prospects see little reason to abstain from sex or consistently practice contraception to avoid a birth that will have little effect on their futures. This perspective argues that improving the educational and economic prospects of disadvantaged youth will increase their motivation to prevent adolescent pregnancy.

Across the nation, substantial funding is being provided to areas designated as enterprise zones or empowerment communities. If such funding is successful in bringing business into a community, then, if the opportunity costs hypothesis is correct, over time adolescent sexual and fertility behavior should change, as adolescents perceive that delaying sexual involvement and avoiding pregnancy can lead to socioeconomic advancement. As recommended in principle ten, rigorous evaluation of these programs should be considered.

Ongoing evaluation studies can be rather readily expanded to examine such an hypothesis. Over time, adolescent birth rates can be tracked. If survey data are being collected, questions about sexual, contraceptive use and parenthood can be added to the survey. Issues of selectivity, sub-group variation, in-migration to the community, and out-migration from the community require attention within any larger evaluation, but if micro data are collected for the larger evaluation, these data can be used to adjust findings for studies of adolescent fertility.

Sex Education and Interpersonal Skills

Reviews of the effects of sex education (e.g., Kirby et al., 1994) indicate that, while sex education does not hasten sexual initiation among teens, neither does it have very large or sustained effects in delaying sex or encouraging contraceptive use among those adolescents who are sexually active. However, programs like Postponing Sexual Involvement and Reducing the Risk have gone beyond providing information in a lecture format to teach resistance skills, to use discussion methods, and to bring in older teens as role models. These augmented sex education approaches have had greater success both in delaying sex and in increasing contraceptive use. However, as yet, no programs have had been found to have really substantial and sustained impacts across sub-groups. The programs that have been evaluated, however, have been rather short-term interventions. The question for program developers is whether the approaches used in these classes, adapted for older and younger students, and offered repeatedly for pre-adolescents, adolescents and teens might have a cumulative impact that really makes a difference.

In sum, although few rigorous intervention evaluations are currently available that point out a clear direction for reducing adolescent fertility, data available from basic research studies and existing evaluations do provide guidance for future initiatives. Working within families, schools, communities, and agencies such as welfare offices, thoughtful and sustained initiatives can be developed that can help reduce the very high rate of adolescent childbearing in the United States.

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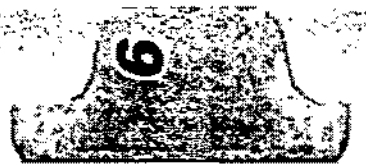
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Welfare Reform Resource Packet
Section IX

The National Campaign to Prevent Teen Pregnancy
March 1997

Maryland Plan

The National Campaign to Prevent Teen Pregnancy
March 1997

REDUCING OUT-OF-WEDLOCK BIRTHS

Submitted by:
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December 1995

Table of Contents

I. OVERVIEW

The federal government has established a program to award funding to states in which the out-of-wedlock births are reduced by 1%. This document sets forth one possible plan to reduce out-of-wedlock births in Maryland.

It is well-known that:

- The majority of out-of-wedlock births result in the single, female parent raising the child.
- Single parent households headed by females are more likely to live in poverty (Kids Count, 1994).
- Many families receiving Aid to Families With Dependent Children (AFDC) are headed by single female parents.
- Problems like poor academic performance, delinquency, and other poor outcomes for children are associated with living in single parent families.

While an association does not prove a cause, it is hoped that a reduction in out-of-wedlock births will also help to reduce poverty and poor outcomes for children and families.

II. OBJECTIVES

The goal of the initiative described in this plan is to reduce the number of Maryland's out-of-wedlock births by 1% by 1997.

It is assumed that the majority of out-of-wedlock births result from unintended pregnancies. In fact, one previous study found that 73.2% of births to unmarried women were unintended.[1] Therefore, it is assumed that strategies known to reduce unintended pregnancies will also reduce the number of out-of-wedlock births.

III. STRATEGIES

The most successful endeavors to change individual behaviors and health outcomes capitalize on the indigenous expertise of the target community. It is critical to shift from agency-driven strategies to community-driven strategies and accountability. Proven community organization principles should be followed in developing and implementing the strategies proposed on the following pages.

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[1] Intention Status of U.S. Births in 1988: Differences by Mothers' Socioeconomic and Demographic Characteristics. Family Planning Perspectives, 27, 1995, p. 14

Adolescents

The risk factors for adolescent pregnancy are:

- Economic and social deprivation
- Family instability
- Lack of academic commitment and success
- Peer and other social norms favoring early sexual involvement, delinquent behavior, early childbearing, etc.

These risk factors can unfavorably influence adolescent and young adult health outcomes and lifestyle choices, including problems with STDs, substance abuse, and other poor economic outcomes (Development Research and Programs, Inc., 1993).

The following strategies should be pursued in addition to supporting the strategies currently in place for adolescent pregnancy prevention:

Education

- High quality education accessible to all children and youth that is designed to maximize success for all learning styles, abilities, temperaments and cultures
- Developmentally-appropriate comprehensive health education including skill-building taught by qualified health education teachers in all schools, both public and private, for all ages and grades
- Availability of school nurses in each school
- Sexuality education, access to contraception, and other health promotion programs and services that reach out-of-school adolescents

Community

- Multi-media promotion of responsible sexual decision-making involving schools, parents, health departments, religious community and businesses
- Increased adult supervision for minors, especially after school
- Accessible and appealing recreational and extracurricular activities for all children and youth
- Community service opportunities that give all children and youth the chance to be successful in helping others

Social Services

- Physical and sexual abuse prevention at primary, secondary and tertiary levels
- Accessible and affordable child-care services for all income levels

Employment Development

- Adequate job preparation and placement assistance for all youth ready to work and especially those out-of-school
- School-to-work opportunities in partnership with private business and public agencies
- Financial aid and scholarships to provide post-high school education for everyone who desires it

Health

- Access to primary health care for adolescents that is convenient, confidential, and affordable
- Access to birth control counseling and services for sexually active adolescents that is convenient, confidential, and affordable
- Prenatal care, childbirth classes, and parenting classes provided to every pregnant teenager and her partner

The implementation and maintenance of these strategies is crucial. Section V outlines what is needed throughout planning and implementation phases. It also includes support information for these and other current strategies.

20-29 year olds:

The strategies listed above for adolescents should have long term effects and eventually decrease unintended pregnancies among 20 to 29 year olds. However, programs and services designed for people in this age group should also be improved or added as necessary.

The following **Community strategies** should be pursued in addition to strategies currently in place:

- Health education that is designed to change attitudes and behaviors, especially as it relates to HIV/STDs and substance use
- Health promotion programs designed to increase attitudes and behaviors favorable to unintended pregnancy prevention (including partner negotiation skills and how to access contraceptives) where 20 - 29 year olds are found, e.g. health care providers, social services, businesses, recreational locations

- Increasing accessibility of general and reproductive health care for men and women
- Increasing primary care provider involvement in assessing risk behavior and childbearing readiness among male and female patients and provision of appropriate education and services accordingly
- Training for health care providers on available issues and services to help young adults deal appropriately with STDs, sexual assault, substance use, and unwanted pregnancy
- Multi-media health communication designed to raise awareness of risk behaviors, prevention, and resources available

Section V outlines what is needed throughout planning and implementation phases. It also includes special considerations for working with 20 to 29 year olds as well as support information for these and other current strategies.

IV. TIMELINE

Implementation can begin as soon as desirable and effective activities or services are identified and resources are available. The length of time required for implementation depends upon the extent of the service or program (e.g., whether it is a modification of an existing service or a completely new program) and who is required to be involved to maximize success. **It is recommended that the activities outlined in Section V under *Needs Assessment* and *Research* be completed prior to implementation, although some implementation may be done concurrently with assessment.**

Persons who are highly interested in the strategies and/or their outcomes, whether negatively or positively, should be considered during the planning phase to ensure that implementation runs smoothly. Where possible and reasonable, these individuals should be considered in all phases of planning and involved where possible.

A table listing implementation activities and estimated time for completion is on the next page.

Implementation Timeline

	Month												
Activity	Dec '95	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Plan reviewed and approved	***												
Form State steering committee to oversee statewide strategy planning, implementation and evaluation		** *											
Utilize local management Boards, ICAPPPs and other existing committees to oversee project coordination, strategy planning, implementation and evaluation at the jurisdiction level		** *											
Form community/agency teams to determine best approach/location for each strategy		** *											
Adolescent Strategies													
Education (continuing into 1997)										***	***	***	***
Community		** *	***	***	***	***	***	***	***	***	***	***	***
Social Services					***	***	***	***	***	***	***	***	***
Employment Development					***	***	***	***	***	***	***	***	***
Health					***	***	***	***	***	***	***	***	***
20 - 29 year old Strategies													
Community		** *	***	***	***	***	***	***	***	***	***	***	***
Evaluation		** *	***	***	***	***	***	***	***	***	***	***	***

V. DATA AND SUPPORT DOCUMENTATION

Data

National statistics show an increase of 82% in out-of-wedlock births since 1980. In Maryland, Department of Health and Mental Hygiene Vital Statistics collects data on out-of-wedlock births. The percentage of births in Maryland that are out-of-wedlock has increased 31% from 1980 to 1994, the latest year for which data are available.

Table 1 (please see Appendix) shows the number and percent of births in 1994 to unmarried women by age group. It is important to note that:

- More than 50% of all out-of-wedlock births are to women between the ages of 20 and 29; about 32% are to women aged 20 to 24.
- About a quarter of all out-of-wedlock births are to women under the age of 19.
- Over 90% of all births to adolescents under age 18 are out-of-wedlock.
- For adolescents ages 18 and 19, about 85% of births are to unmarried females
- The percentage of births that are out-of-wedlock does not drop below 50% until after age 24.

Any plan must take these factors into account, and address the reasons that so many births to women under age 24 are out-of-wedlock. In addition, a 1% reduction in out-of-wedlock births is equivalent to about 250 births, based on 1994 numbers. Concentrating only on adolescents would therefore produce insufficient results to achieve the 250 birth reduction; efforts must also be target to women over age 19 as well.

Table 2 (please see Appendix) shows the number and percentages of births to unmarried women by political subdivision, and *Table 3* (please see Appendix) shows the jurisdictions ranked in order by percent of births that are out-of-wedlock. It is interesting, but not surprising, to note that this ranking is similar to the ranking for adolescent birth rates. Assuming that most births to unmarried women are unintended (mistimed and unwanted), and poverty and limited access to resources are associated with unintended pregnancy as they are with adolescent pregnancy, it would follow that the Eastern Shore and Baltimore City would rank highest in out-of-wedlock births.

The percentages of births to unmarried women are higher in eight jurisdictions than for the state overall, which is 32.6. Also, the numbers of births to unmarried women in the Eastern Shore counties are low, but the proportions of total births are 12% to 51% higher than the proportion for the state overall. High numbers of births to unmarried women may indicate the magnitude of economic difficulty that results, while high proportions of births to unmarried women may indicate a variety of conditions from disparity of services and opportunity in that jurisdiction to

cultural preferences favoring out-of-wedlock births. Priorities for choosing which counties to target should therefore be established taking into account numbers of births as well as proportion of births to unmarried women. Cultural preferences should be assessed and programs designed with sensitivity to those preferences.

Table 4 (please see Appendix) shows birth order data. Almost half of all out-of-wedlock births are first order. Prevention efforts should therefore probably be directed at women who have never given birth. However, over half of out-of-wedlock births are second order and higher, so prevention with women who have already had children will also be critical. *Table 5* (please see Appendix) shows that most out-of-wedlock births are first order across ages 29 and younger. However, a greater percentage of births that are second order and above are in the 20 to 29 year old age group. This indicates that it would be important to target efforts among 20 to 29 year olds who have children, perhaps at delivery of the first child.

Target Populations

Priority jurisdictions to target are the top six to eight jurisdictions with the greatest proportion of births to unmarried women. At the very least, efforts should be planned and implemented in Baltimore City and Dorchester, Somerset, Prince George's, Wicomico, and Worcester counties. Baltimore City and the Lower Eastern Shore (Somerset, Wicomico, Worcester) already have extensive adolescent and unintended pregnancy prevention strategies in place. Any additional recommended strategies should be developed in collaboration with existing program leadership and staff.

Dorchester County has an active Interdepartmental Committee on Adolescent Pregnancy Prevention and Parenting (ICAPPP), but has few services and intensive unwanted pregnancy prevention efforts. Because of the close proximity of Dorchester County to the Lower Eastern Shore, the possibility should be considered of working efforts into existing Lower Eastern Shore strategies.

Kent and Caroline Counties proportion of births to unmarried women are 13% and 12% higher respectively than the state's proportion overall. The health and economic consequences on these counties should be further investigated, since neither of these counties has the level of employment and health care opportunities of the surrounding counties. Their relatively low adolescent birth rates and other indicators as compared to other areas of the state often result in lack of funding to establish prevention initiatives. Upon closer investigation, there may be more considerable economic drain and poor health outcomes than for other counties with greater wealth and resources. If that is the case, consideration should be given to including these jurisdictions in the priority areas to target.

Table 6 (please see Appendix) shows the number and percentages of births to unmarried women by jurisdiction and age. The top eight jurisdictions are in bold. In all jurisdictions, 20 to 24 year olds make up the greatest proportion of births to unmarried women, indicating that this population and their partners should receive top priority in efforts to reduce out-of-wedlock

births. However, in Caroline and Somerset, and to a lesser extent in Kent and Dorchester counties, proportion of births to 18 to 19 year olds follows closely behind 20 to 24 year olds. In these counties, 18 to 19 year olds and their partners should therefore receive the same level of attention in out-of-wedlock birth reduction efforts as 20 to 24 year olds.

Strategies should be specifically designed to address the male's role in unintended pregnancies. The Male Task Force of the Governor's Council on Adolescent Pregnancy is currently developing plans for male involvement in pregnancy prevention and parenting. Further attention to detail should include representatives from this Task Force to maximize effectiveness and reduce fragmentation and duplication of services.

There is a tendency is to base acceptance of childbearing decisions on the ability of the parent(s) to provide for the child without public assistance. However, it would be presumptuous to focus only on women who are eligible for AFDC, since having a child does not guarantee that a woman will not achieve economic self-sufficiency. In addition, the stress and physical risk that accompany pregnancy and birth, while increased in women of lower socioeconomic status, is present for all women. Infants of mothers who did not desire pregnancy may also be at increased risk, since the mother may have been less likely to seek prenatal care and to adjust health behaviors such as smoking and drinking alcohol. All women and their partners, regardless of socioeconomic status, therefore stand to benefit from improved efforts to assist them in reducing the likelihood of unintended or unplanned pregnancy.

Interagency and Community Collaboration

As embodied by the Governor's Council on Adolescent Pregnancy and the local Interdepartmental Committees on Adolescent Pregnancy Prevention and Parenting, this initiative should be fully planned and implemented by a team of representatives from state and local agencies, as well as the community. The following agencies should be involved from the state and local levels:

- Office for Children, Youth, and Families (GCAP, MITP, Infant Mortality Commission, System Integration Support, Headstart, Child Care, Making the Grade)
- Department of Health and Mental Hygiene
- Department of Education
- Department of Human Resources
- Bureau of Labor, Licensing and Regulations
- Department of Juvenile Justice
- Local Management Boards
- Other associated Executive Department offices and task forces working on issues pertinent to children, youth, and families
- Private for-profit and non-profit agencies and businesses
- Private Industry Council

A state steering committee could effectively oversee planning, implementation and evaluation from a state perspective and bring necessary resources to bear as needed. At the local level,

steering committees and working teams could effectively coordinate efforts and customize strategies appropriate to each jurisdiction and target community.

Needs Assessment

There is no known research that has examined the causes specific to out-of-wedlock births. An assessment of the causes specific to the "out-of-wedlock" aspect would reveal the most effective prevention methods and help to ensure the most significant results.

In order to adequately target each population group described above, it would be prudent to determine what would be most effective and where the greatest numbers of men and women would be reached with each effort. In addition, planning and implementation should take into consideration the diversity of attitudes toward out-of-wedlock births, and that unmarried women giving birth is now viewed by many as ordinary and acceptable. Planning should begin with an assessment phase to further ascertain, in collaboration with the community:

- The extent of unintended and unplanned pregnancies in the target locations and populations
- The degree to which the known causes of unintended and unplanned pregnancy exist in the target community
- The effects of unintended and unplanned pregnancies on the target populations and communities
- Whether the causes and consequences of unintended pregnancies differ from unplanned pregnancies.
- Cultural preferences and perceptions relating to out-of-wedlock births

Solutions can then be truly customized to address each community's unique needs.

Research

The research phase requires six to twelve months for assessment, community organization, and strategy design. Many activities can be conducted concurrently. Examples of activities include:

Assessment	- Decision on priority areas to target - Documentation of presence and extent of existing efforts - Examination of community perceptions and priorities
Community Organization	- Formation of interagency and community-based steering committees - Organization of community groups responsible for various activities - Community prioritizing of efforts
Strategy Design	- Research for existing programs that have been evaluated to be effective in reducing unintended pregnancies - Documentation of the risk factors unique to the target communities - Identification of the environmental, social and psychological factors that enable and reinforce both the risk factors and the desired protective factors and measurable objectives - Creation of activities and services to achieve measurable objectives - Identification of resources needed to implement activities and services

Many researchers have found that risk factors can be eliminated or ameliorated and protective factors established through successful experiences in school. Therefore, education seems to be the most critical strategy to reduce adolescent pregnancy and to prevent unintended/unplanned pregnancies as the adolescent population becomes adult. **High quality education that takes into account the diversity of cultures, temperaments, learning styles and abilities should be available and accessible to every child in the State.** While this will require substantial financial and personnel resources, the return will far exceed the initial investment. Without this crucial component, other community programs and services can only serve as temporary and insufficient solutions.

Current Strategies for Adolescents

Many programs and services are already in place to address adolescent pregnancy. Maryland has seen a decrease in the adolescent birth rate in 1992 and 1993, the latest year in which birth rate data is available.

To continue that downward trend, financial and staff resources should remain in place to support the following current strategies:

- Teen parenting programs with child care and parenting education
- Support groups for pregnant and parenting teens
- Comprehensive sexuality education curricula in some school districts
- Accessible contraception for sexually active teenagers in some jurisdictions (especially Prince George's and Anne Arundel Counties and Baltimore City through the Healthy Teens and Young Adults program)
- Support to parents in their role as the primary sexuality educators of their children
- School-based wellness centers in some jurisdictions
- Community-based programs in some jurisdictions that encourage responsible sexual behavior, conflict resolution, abstaining from alcohol, tobacco and other drugs, and that address the causes of other related risk behaviors
- Multi-media promotion of abstinence targeted to young adolescents in the Baltimore media-market and somewhat in other areas of the state, and some advertisement of services in jurisdictions with Healthy Teens and Young Adults clinics

As described in Section III, additional components and modifications to existing programs and services are needed to reinforce the successes that have occurred, and to have an even greater impact on reducing adolescent pregnancy. A truly comprehensive approach targets the full range of economic, social and psychological risk factors for adolescent pregnancy. **The desired impact on out-of-wedlock births cannot occur unless adolescents in the targeted jurisdictions are presented with clear and consistent messages, accessible services, and community-driven programs wherever they go.**

Ideally, institutionalization of new strategies, continued collaboration on existing strategies, and ongoing evaluation of progress and impact will maximize the strength and persistence of effect.

Current Strategies for 20 to 29 Year Olds

Programs and services currently in place to help prevent unintended pregnancies among 20 - 29 year olds include:

- Affordable, accessible contraception for most women and men
- Job training and placement services affordable and accessible especially to low-income women and somewhat to low income males (e.g., Project Independence, job placement services)
- Health education that promotes responsible sexual behavior to avoid infection with STDs and HIV

- Preventive general and gynecological health care available to most women

Financial and staff resources should remain in place to support these efforts.

Special Considerations for Targeting 20 to 29 Year Olds

The same social, economic and psychological factors listed for adolescents also work to increase the risk of unintended pregnancy among older women. However, there are additional factors that mediate the effect of programs to reduce unintended pregnancy. The following should be taken into consideration in designing strategies for 20 to 29 year old women and their partners:

- People age 18 and older are not subject to the child protective laws and policies that are often used to support adolescent pregnancy reduction strategies.
- The twenties are characterized by increased independence, self-determination, and development of personal identity, lifestyle, and societal roles.
- Many 20 to 29 year old women may plan or desire pregnancies regardless of marital status.
- There is greater societal acceptance of births to unmarried women in this age group.
- Women age 20 to 29 and their babies actually have the lowest incidence of perinatal and infant morbidity and mortality, and are considered to be at the best age for childbearing.
- Many single 20 to 29 year old women have the economic and social self-sufficiency required to raise children independent of the public welfare system.
- 20 to 29 year old women cannot be reached in one place, such as school, but live, work and socialize in a variety of places throughout communities.

This age group appears to be underserved with prevention programs. Because of the newly acquired self-sufficiency and autonomy common to young adults, there is more opportunity for risk behaviors without as much threat of law or parental involvement (e.g., alcohol use and abuse, increase in sexual activity, poor nutrition, etc.). Strategies that are paternalistic, authoritarian or punitive in nature will be even less successful in this age group than in others. Decisions about which segment of the 20 to 29 year old population to target should be sensitive to these considerations. Program efforts should capitalize on the natural strengths of this developmental stage and should be located to reach the population in its many work, social and residential settings.

Programs and services for this group should focus on helping to delay unplanned pregnancies through education, access to opportunities that create an incentive to delay childbearing until pregnancy is desired and economic self-sufficiency is achieved, and access to preferred methods of

contraception. The role of males should not be ignored in this process. Access to contraception for males and increasing responsibility for preventing unintended pregnancies are desirable goals of pregnancy prevention strategies.

Evaluation

The assessment of the degree to which planned initiatives are implemented and effective is critical to the sustainability of efforts to improve health outcomes. An evaluation design should begin in the planning phase, by identifying those components that are desirable to measure.

Determining the extent to which an initiative has been implemented can point out problem areas that need to be addressed before efforts proceed. In addition, if all implementation objectives are met, the program is more likely to be effective in improving health outcomes than if these objectives are not met. This evaluation is sometimes referred to as a "formative" evaluation and should take place at each step of implementation.

The extent to which the target population is reached is also important to evaluate, and is one of the most straightforward objectives to measure. Counts of patients seen, people served, and population exposed to a program or message will provide valuable information about how effective the initiative is in reaching the greatest number of people.

If it is desirable to continue the program as part of a stable, existing organization, or to seek or continue additional funding, it will be important to be able to measure the effect initiatives have on knowledge, attitudes, behaviors and health outcomes related to reducing unintended pregnancies. A valid evaluation of the impact of the programs and services is best designed by someone with expertise specific to evaluation research. The evaluator should be included in the planning process, and evaluation should begin as soon as it is expected that an effect will occur. With complex issues such as pregnancy prevention, there may be a lag time between program and effect. For example, one sexuality education program designed to reduce risk behaviors for HIV took 18 months to show a change in behavior.[2]

The length of time it takes to design and complete the evaluation phase is dependent upon the length of time it takes to implement, the degree of difficulty in measuring effect, and the length of time expected for the effect to occur.

[2] Kirby, D., Barth, R., Leland, N. & Fetro, J. (1991). *Reducing the Risk: Impact of a new curriculum on sexual risk-taking*. Family Planning Perspectives, 6, 253-263.

Appendix

Table 1 Number, Percent, Percentage of Births to Unmarried Women By Age of Mother, Vital Statistics, 1994

Table 2 Number and Percent of Births by Marital Status of Mother and Political Subdivision, Vital Statistics, 1994

Table 3 Number and Percent of Births to Unmarried Women by Jurisdiction, Vital Statistics, 1994

Table 4 Number and Percent of Births to Unmarried Women by Birth Order, Vital Statistics, 1994

Table 5 Number of Births to Unmarried Women & Percent of Total by Birth Order & Age, Vital Statistics, 1994

Table 6 Number and Percent of Births to Unmarried Women by Jurisdiction and Age, Vital Statistics, 1994

Table 1. Number, Percent, Percentage of Births to Unmarried Women By Age of Mother
Vital Statistics, 1994 (Final)

AGE OF MOTHER	NUMBER OF BIRTHS	PERCENT OF ALL UNMARRIED BIRTHS	PERCENT TO UNMARRIED WOMEN
All ages	24,991	100.0%	33.8%
Under 15	251	1.0%	95.8%
15-17	2,702	10.8%	93.0%
18-19	3,727	14.9%	84.6%
20-24	8,144	32.6%	55.5%
25-29	5,341	21.4%	25.5%
30-34	3,260	13.0%	15.8%
35-39	1,255	5.0%	14.6%
40 & over	246	.98%	16.9%
Not stated	65	.26%	.08%

Table 2. Number and Percent of Births by Marital Status of Mother and Political Subdivision
Vital Statistics, 1994 (Preliminary)

POLITICAL SUBDIVISION	TOTAL BIRTHS	BIRTHS TO UNMARRIED WOMEN	PERCENT OF ALL BIRTHS THAT ARE TO UNMARRIED WOMEN
Maryland	73,937	24,959	33.8%
Northwest	5,369	1,398	26.0%
Baltimore Metro	35,106	13,044	37.2%
National Capital	24,948	7,609	30.5%
Southern	3,817	1,099	28.8%
Eastern Shore	4,697	1,809	38.5%

Table 3. Number and Percent of Births to Unmarried Women by Jurisdiction
Vital Statistics, 1994

Jurisdiction	Total Births	Births to Unmarried Women*	Percent of Total Births
Baltimore City	11,662	7,900	67.7%
Somerset	261	150	57.5%
Dorchester	352	187	53.1%
Wicomico	1,140	502	44.0%
Prince George's	12,745	5,280	41.4%
Worcester	500	194	38.8%
Caroline	386	145	37.6%
Kent	227	81	35.7%
Talbot	363	129	35.5%
Allegany	814	277	34.0%
Washington	1,533	494	32.2%
Charles	1,637	527	32.2%
Cecil	1,063	317	29.8%
Saint Mary's	1,306	363	27.8%
Garrett	376	102	27.1%
Baltimore County	8,910	2,276	25.5%
Queen Anne's	405	98	24.2%
Anne Arundel	6,329	1,519	24.0%
Calvert	874	204	23.3%
Harford	2,984	605	20.3%
Frederick	2,646	524	19.8%
Montgomery	12,203	2,323	19.0%
Carroll	1,899	309	16.3%
Howard	3,322	415	12.5%

*Total does not add up to 24,991, as 65 births are unaccounted for in Vital Statistics data

Table 4. Number and Percent of Births to Unmarried Women by Birth Order, Vital Statistics, 1994

Birth Order	Number of Births	Percent
Total	24,991	100.0%
First	11,679	45.0%
Second	5,963	22.3%
Third	3,194	12.2%
Fourth and above	2,616	10.2%
Not Stated	1,474	10.2%

Table 5. Number of Births to Unmarried Women & Percent of Total by Birth Order & Age, Vital Statistics, 1994

Birth Order	< 15	Percent of total for Birth Order	15-17	Percent Of Total for Birth Order	18-19	Percent of Total For Birth Order	20-29	Percent of Total For Birth Order
First	238	2.0%	2,213	18.9%	2,557	21.9%	5,433	46.5%
Second	4	.07%	299	5.0%	435	7.3%	3,746	62.8%
Third	1	.03%	37	1.2%	176	5.5%	2,037	63.7%
Fourth and above	N/A	N/A	5	.2%	43	1.6%	1,484	56.7%
Not Stated	8	.54%	148	10.0%	216	14.6%	947	36.2%

Table 6. Number and Percent of Births to Unmarried Women by Jurisdiction and Age
Vital Statistics, 1994

JURISDICTION	<15	%	15-17	%	18-19	%	20-24	%	25-29	%	TOTAL*
Allegany	1	0.4%	42	15.2%	49	17.7%	98	35.4%	57	20.6%	277
Anne Arundel	7	0.5%	162	10.7%	234	15.4%	510	33.6%	334	22.0%	1,519
Baltimore County	22	1.0%	220	9.7%	340	14.9%	725	31.9%	521	22.9%	2,276
Calvert	1	0.5%	23	11.0%	36	17.2%	67	32.1%	41	19.6%	209
Caroline	1	0.7%	16	11.0%	36	24.8%	42	29.0%	25	17.2%	145
Carroll	1	0.3%	17	5.5%	61	19.7%	92	29.8%	65	21.0%	309
Cecil	3	0.9%	33	10.4%	66	20.8%	119	37.5%	56	17.7%	317
Charles	3	0.6%	54	10.2%	92	17.5%	193	36.6%	110	20.9%	527
Dorchester	2	1.1%	24	12.8%	37	19.8%	69	36.9%	31	16.6%	187
Frederick	5	1.0%	40	7.6%	89	17.0%	188	35.9%	112	21.4%	524
Garrett	N/A	N/A	13	12.7%	26	25.5%	39	38.2%	15	14.7%	102
Harford	4	0.7%	70	11.6%	103	17.0%	201	33.2%	123	20.3%	605
Howard	1	0.2%	32	7.7%	49	11.8%	131	31.6%	106	25.5%	415
Kent	N/A	N/A	10	12.3%	17	21.0%	31	38.3%	13	16.0%	81
Montgomery	17	0.7%	162	7.0%	284	12.2%	678	29.2%	544	23.4%	2,323
Prince George's	33	0.6%	459	8.7%	681	12.9%	1,753	33.2%	1,267	24.0%	5,280
Queen Anne's	N/A	N/A	9	9.2%	23	23.5%	34	34.7%	17	17.3%	98
Saint Mary's	1	0.3%	41	11.3%	59	16.3%	148	40.8%	62	17.1%	363
Somerset	2	1.3%	21	14.0%	32	21.3%	43	28.7%	34	22.7%	150
Talbot	3	2.3%	11	8.5%	15	11.6%	54	41.9%	28	21.7%	129
Washington	2	0.4%	46	9.3%	103	20.9%	194	39.3%	87	17.6%	494
Wicomico	9	1.8%	66	13.1%	95	18.9%	181	36.1%	79	15.7%	502
Worcester	2	1.0%	25	12.9%	25	12.9%	68	35.1%	41	21.1%	194
Baltimore City	131	1.7%	1,106	14.0%	1,175	14.9%	2,486	31.5%	1,573	19.9%	7,900

*Total does not add up to 24,991 because 65 births are unaccounted for in Vital Statistics data.

New Hampshire Plan

The National Campaign to Prevent Teen Pregnancy
March 1997

New Hampshire Department of Health & Human Services
Summary of Teen Pregnancy Prevention Efforts

The NH Department of Health & Human Services (DHHS), Division of Public Health Services has served as the NH Title X Family Planning Grantee for more than two decades. A primary focus for service provision and program development has been on reaching out to adolescents, reducing barriers to teens and providing comprehensive reproductive health services which includes education, guidance and life skills to teens. New Hampshire has seen the teen birth rate steadily drop and per the latest Alan Guttmacher Institute data (Oct. 1996), New Hampshire has the lowest teen birth rate in the country for the second year in a row.

In 1995 the Federal Title X program made available, via competitive bid, supplemental funds that were to be directed towards at least one of the Title X priority areas. Enhanced services to teens was one of those priority areas. On July 1, 1995 the NH Department of Health and Human Service's (NH DHHS) Family Planning Program received a grant award ($120,000 for FY'96) from the Federal Title X Program to begin the operation of nine specialized teen clinics in both rural and urban communities throughout the state. Services provided at these clinics address teens' perceived barriers to reproductive health care as identified through teen focus group research which revealed that teens want services to be confidential, affordable, to be provided in evening or weekend hours without an appointment, and to have teen peer educators available during clinic operation.

Each of the teen clinic programs incorporate the following components into their program: community collaboration; teen involvement in the planning and implementation of the program including peer education; provision of reproductive health services; clinic, community and peer education which includes abstinence education and parental involvement; aggressive marketing, media, and outreach efforts targeting adolescents; and program quality assurance and evaluation. The teen clinics are generally staffed by nurse practitioners, reproductive health counselors and educators, and volunteer or paid teen peer educators. The clinics have also involved student nurse practitioners who work closely with the teen clinic staff.

Since the inception of these specialized teen services there has been a 22 percent increase in the number of teens being served by the four agencies which operate the eight teen clinics (one clinic site has been dropped due to a low number of clients being seen). Considering the many years of relatively stable numbers of teens being seen by our family planning agencies, a 22 percent increase is considered to be significant and a strong indication of the success of this program. Although the federal funding provided in FY 1996 for this project was no longer available, the NH DHHS's Family Planning Program set aside level funding to continue the clinics in FY 1997 and plans on doing the same for FY 1998 and 1999.

In November of 1995, the Division of Public Health Services was directed to begin working on the development of a comprehensive, teen pregnancy prevention model that would become the foundation for state welfare reform, teen pregnancy prevention efforts. A plan was drafted in concert with the Family Planning Program and, along with the feedback from the newly created Adolescent Pregnancy Prevention and Parenting Workgroup (APPPW), a model plan was created and endorsed. From these initial efforts

the APPPW outlined a plan of action to include: the proposal of a demonstration project, a kick-off conference, outreach to schools, and a statewide public education and media campaign. Each initiative is summarized below.

Teen Pregnancy Prevention Demonstration Project

As part of a state-wide initiative to reduce teen pregnancies, the NH Department of Health and Human Services (DHHS) is currently developing a model teen pregnancy prevention program to be implemented as a three year community demonstration project. The purpose of this proposed initiative is to establish a multi-faceted community-based teen pregnancy prevention project, in an effort to forge community partnerships that will provide comprehensive support and guidance to adolescents throughout their development and will enable youth to have significantly stronger incentives and skills to make healthy decisions about their lives, including the prevention of pregnancy. The project components include; teen involvement, community collaboration, marketing and outreach, data reporting and evaluation and service or program delivery (case management services, medical and health services, mental health services, health and family life education, home visiting and support group for parenting teens, homework assistance/tutoring program, career guidance/work cooperative/mentor programs, and sports/fine arts programs). The principals being used to guide this project are those outlined by the US Department of Health and Human Services and are as follow:

- Parents and other adult mentors must play key roles in encouraging young people to avoid early pregnancy and to stay in school.
- Abstinence and personal responsibility must be primary messages of prevention programs.
- Young people must be given clear connections and pathways to college or jobs that give them hope and a reason to stay in school and avoid pregnancy.
- Public and private sector partners throughout communities, including parents, schools, businesses, media, health and human services providers, and religious organizations must work together to develop comprehensive strategies.
- Real success requires a sustained commitment to the young person over a long period of time.

NH DHHS will forge a collaborative partnership with the community awarded these funds which will include technical assistance in program implementation and evaluation. Evaluation results will be disseminated to communities throughout the state in an effort to direct limited resources and strengthen community based pregnancy prevention efforts. NH DHHS hopes to implement this demonstration project during FY'98 (pending availability of funding) and will support the replication of this model in other communities based upon the demonstration project evaluation results and availability of funds. A copy of the draft plan is enclosed.

Public Education and Media Campaign

Pending the availability of funds, the New Hampshire Department of Health & Human Services will be requesting proposals from agencies or organizations, with experience in developing and carrying out media/informational campaigns on health-related topics, to assist the Department in planning and carrying out an adolescent pregnancy prevention project with an emphasis on outreach and education to: males ages 18 to 35 with an emphasis on male responsibility and to all adolescents with an emphasis on healthy relationships, identifying life options and enhancing decision making skills. Emphasis will also be placed on outreach and education to parents on parent/child communications.

The goals of this initiative include:

1. Assistance in the acquirement and review of nationally or otherwise developed public service announcements (PSAs) with pregnancy prevention and outreach messages as noted above, targeted for use and/or adaptation in New Hampshire media channels, including television public service ads, radio and news/print outlets.

2. Planning a comprehensive and coordinated campaign, using referenced PSAs and other data and information on teen pregnancy prevention, specifically outreach to males and females and parents, as provided by the Department of Health & Human Services, as well as the use of age and gender appropriate focus groups, for all media channels in the State.

3. Working with media channels to schedule and place PSAs on radio and television; place written informational pieces in print media channels; and schedule placement of radio talk shows regarding this subject.

It is hoped that such a media campaign would elicit sponsorship in the form of financial support for continuation of the media campaign from community based organizations and the business community beyond one year.

Conference and Kick-Off Campaign

On May 30, 1997 the NH Department of Health and Human Services is sponsoring a day long, statewide conference entitled, ***Community Partnerships: Solutions to Preventing Teen Pregnancy.*** The conference is intended to draw a mixed audience of health and human service professionals, educators, clergy, businesses and decision makers. The goal of the conference is to get diverse professionals to talk to one another about their respective roles in preventing teen pregnancy in their own community. The keynote speaker will be Sarah S. Brown, executive director of the National Campaign to Prevent Teen Pregnancy. The conference will also feature a teen panel, a teen theater group, awards to businesses and programs that have done exemplary work on behalf of adolescents in their communities and presentations by award recipients on their initiatives. It is hoped that this conference coincides with the beginning of the public education

campaign and the community demonstration project. As mentioned above these two initiatives are contingent upon funding.

Outreach to Schools

A fourth initiative will be an outreach campaign to schools around the state. Staff from the Department of Health and Human Services will be available to travel to schools around the state upon request to talk about issues related to paternity and the realities of life on public assistance. This has been well received in the past. Depending upon the demand for this service, there may be a train the trainers initiative down the road.

Community Partnerships:

Solutions to Preventing

Teen Pregnancy

May 30, 1997

Wayfarer Inn, Bedford, NH

A conference for educators, health and human service workers, businesses, clergy and others who want the best for New Hampshire's youth.

Presented by
the NH Department of Health and Human Services and members of the Adolescent Pregnancy Prevention and Parenting Work Group

Join together with individuals from many facets of the community to begin or further conversations about community solutions to solving the problem of teen pregnancy and ensuring for the success of our state's youth.

8:30 AM Registration - Coffee

9:00 AM **Welcome address-**

Terry L. Morton, Commissioner
NH Department of Health and Human Services

Her Excellency, Jeanne Shaheen, Governor

9:30 AM **Keynote Sarah S. Brown**, *Executive Director, the National Campaign to Prevent Teen Pregnancy*

Preventing Teen Pregnancy: From the Nation's Capital to Your Community

Bio information about Sarah

10:15 AM Break

10:30 ***Teens Talk*** - Panel Discussion
(thinking about Laura Knoy of NH Public Radio as moderator) Pregnant and parenting teens and adults who had teen pregnancies will share their insights with us. What would have prevented their early pregnancies? What advice do they have for professionals reaching out to help?

11:15 Outline the Demonstration Project or a Business presentation. (in the process of inviting Dr. Richard Green former CEO of Honey well

12:00 noon Lunch

12:45 PM **Success by 19 Awards** - Awards will be presented to businesses and programs that have done exemplary work on behalf of teens in New Hampshire.
(need an MC for this. Also should we have teens give out the awards?)

1:15 PM **ACTING OUT** - Using acting as their medium, teens from this theater program in Keene, NH will engage the audience as they address some of the key issues surrounding teen pregnancy.

2:00 PM **Break Out Sessions** - Hear more about the programs run by the award recipients.
names of each programs listed

3:00 PM **Closing Remarks** - Sarah S. Brown

Registration Form

Directions to the Wayfarer Inn

The Adolescent Parenting and Pregnancy Prevention Work Group is convened by the NH Department of Health and Human Services comprised of staff from various state and state level agencies. Their mission is to develop a state plan to decrease teen pregnancy in New Hampshire through public education and community programs.

This conference is one initiative of the Adolescent Parenting and Pregnancy Prevention Work Group. Other initiatives include:

- A public information campaign
- Outreach to schools
- Model programs in communities

For more information call:
1-800-852-3345 extension 4268

The National Campaign to Prevent Teen Pregnancy is a nonprofit, nonpartisan initiative. The Campaign's goal is to reduce the nation's teenage pregnancy rate by one-third by the year 2005. One of the strategies to accomplish this goal is to support state and local action such as the work being done in New Hampshire.

For more information about the Campaign call :
(202) 857-8655

This conference is support in part by ____ the Maternal and Child Health Program (Title V, Social Security Act), Health Resources and Services Administration, Department of Health and Human Services.

New Hampshire Department of Health and Human Services
Adolescent Pregnancy Prevention Model
"SUCCESS BY 19"

I. Purpose: To establish a multi-faceted community-based teen pregnancy prevention project in an effort to forge community partnerships that will provide comprehensive support and guidance to adolescents throughout their development and will enable youth to have significantly stronger incentives and skills to make healthy decisions about their lives, including the prevention of pregnancy. Many of the societal and economic issues which place adolescents at risk for pregnancy such as poverty, school failure, lack of motivation and family distress also predispose them to other health related problems. The success of this project will not only be in the prevention of teen pregnancies but also in the overall improvement of adolescent health and well being in the community.

II. Background: Family, school, and community based recommendations detailed in the Department of Health and Human Services publication titled *"NH Adolescent Health Task Force Report"* provide a foundation for the "Success by 19" Model for Adolescent Pregnancy Prevention. Based upon this report it is imperative that a teen pregnancy prevention model be multi-faceted and focus on factors associated with the individual adolescent, such as success in school and personal aspirations as well as family factors such as poverty, communication, and economic and educational opportunities. The principles being used to guide this project are those outlined, by the US Department of Health and Human Services, in the document titled *"Preventing Teen Pregnancy: Promoting Promising Strategies, A Guide for Communities"*. These principals include the following:

- Parents and other adult mentors must play key roles in encouraging young people to avoid early pregnancy and to stay in school.
- Abstinence and personal responsibility must be primary messages of prevention programs.
- Young people must be given clear connections and pathways to college or jobs that give them hope and a reason to stay in school and avoid pregnancy.
- Public and private sector partners throughout communities, including parents, schools, businesses, media, health and human services providers, and religious organizations must work together to develop comprehensive strategies.
- Real success requires a sustained commitment to the young person over a long period of time.

The project components detailed below, including service and program delivery, are structured upon these guiding principles.

III. Project Components

A. Teen Involvement

Real solutions to teen pregnancy prevention rest at the community level including with the teens themselves. Since no one strategy will work for all youth it is important to develop programs that are multi-faceted and include youth in planning, implementing and evaluating teen pregnancy prevention strategies. Examples of how teens can be incorporated into the project are: developing marketing and outreach materials such as posters, radio and television PSAs; designing client satisfaction surveys; providing education through peer education programs; and participation on a teen advisory group to assist with program planning and implementation.

B. Community Collaboration

Community collaboration is essential in order to design and implement successful prevention strategies that are tailored to meet community needs, resources, and values. Collaborative efforts involving schools, the state, health and social service agencies, parents, peers, role models, businesses, media, church groups, universities, police and courts and youth groups are needed to reduce duplication of efforts and increase efficiency and effectiveness. The community system includes all of the social service agencies that have provide services such as counseling and guidance services, vocational training and financial assistance. The need to address the economic concerns and needs of adolescents and their parents cannot be overstated. For the highest risk adolescents, access to family planning pregnancy prevention services is not enough to avoid pregnancy. Information about contraception with an emphasis on abstinence and parental participation will not change behavior unless there is motivation to avoid pregnancy. Communities must join together in an effort to provide more opportunities for adolescents after school. Community volunteers are a viable resource for providing needed services to adolescents including homework and tutoring assistance, home visiting, mentor programs, and sports and fine arts programs.

C. Marketing and Outreach

Teens must be involved designing and implementing marketing and outreach efforts. Key to the success of a teen pregnancy prevention program is informing the community of the services offered and reaching those in need of these services. Marketing and outreach efforts need to reach female and male adolescents, male adults, parents, and other key individuals and businesses or agencies in the community.

D. Data Reporting and Evaluation

Strong pregnancy prevention and intervention efforts necessitate equally strong measures of evaluations to document their effects.

Much of the history surrounding pregnancy prevention efforts reveal that many of the programs have lacked useful evaluation strategies. There is a need for "a new generation" of programs that are implemented with careful theoretical and conceptual frameworks that include an extensive evaluation design.

E. Service or Program Delivery

The causes of teenage pregnancy are rooted in the social fabric of our society. Innovative adolescent pregnancy prevention programs have been successful in avoiding adolescent pregnancies and the success of these strategies is the underlying need for the adolescent to be motivated to prevent pregnancy. Multi-faceted approaches that combine pregnancy prevention education, access to contraceptive services, programs to improve life options and programs to prevent repeat pregnancies have been successful in delaying the onset of sexual activity, increasing contraceptive use along those who are sexually active, and reducing pregnancy rates. Such intervention should be tailored to meet the needs of adolescents at several critical turning points in their social, physical and emotional development.

- ***Career Guidance/Work Cooperative/Mentor Programs***
- ***Health and Family Life Education Program (including abstinence based education)***
- ***Homework Assistance and Tutoring Services***
- ***Case Management***
- ***Sports and Fine Arts Programs***
- ***Home Visiting and Support Group to Parenting Teens Program***
- ***Mental Health***
- ***Medical and Health Services***

1. Career Guidance/Work Cooperative/Mentor Program

Studies of adolescent sexual behavior consistently document that socioeconomic disadvantage, school drop-out, and early behavior problems are predictors of adolescent childbearing. Pregnancy prevention strategies need to influence these social and economic factors by focusing on interventions that provide education and occupational opportunities for teens. Teens will not be motivated to avoid early pregnancy and parenthood unless they observe alternative pathways to achieving adult status. Efforts are needed to broaden a teen's "life options", e.g. assistance with admission to college, providing them with a sense of control over their future and assisting teens with shaping their goals for life. The later becomes a challenge as one realizes that most teens think in terms of the concrete (i.e. the present) and not the abstract (i.e. the future) as part of their normal developmental process. Decision making skills development (mentioned above) also assist teens with life planning to enable them to plan for alternatives to early parenthood. Role modeling and mentor programs provide concrete examples for youth for practicing desirable social and interpersonal behaviors. Work cooperative opportunities for youth offer teens actual work experience along with social support and interventions to improve their life planning, decision-making, and team work skills. Life planning programs which include personal finance planning, such as the establishment of a bank account, also provide teens with skills to plan for their economic security. Programs that offer teens a glimpse at what their future can be will have an effect on multiple risk behaviors among teens including drug use, school dropout, delinquency, and teen pregnancy.

2. Health and Family Life/Sexuality Education

Family Life and sexuality education models are designed to inform and influence adolescents' attitudes, knowledge, and behavior regarding sexual behavior, personal relationships, and reproductive health. Teen-focused skill building, family-focused communication building, and community-focused information building are the three major types of education models offered. Teen focused models support teens in remaining abstinent or delaying sexual activity, assist them with developing skills to resist peer pressure, resolve conflicts, and make healthy decisions. Family education models enhance parent-child communications in an effort to delay sexual activity among teens by encouraging parents to promote abstinence and responsible decision making. Community-based models provide pregnancy and contraceptive information to teens in order to reinforce abstinence messages and responsible decision making practices. Included in the family life and sexuality education curriculum is an emphasis on self esteem, decision making, communication, and values clarification.

3. Homework Assistance and Tutoring Programs

Are designed to identify those teens needing additional academic assistance in order to master their studies. Program models all include an assessment of current academic strengths and areas in need of improvement. The assessment process can be as complex as having the assessment conducted by an education specialist or as simple as a review of current status via a multi-disciplinary school-based team. Academic assistance sessions need to be scheduled on a routine basis. Consistency in scheduling and tutors increases the chance of success for a teen. Tutors can be found in many walks of life and can include peers, college students and senior citizens. Educational achievement is key to future economic security. Outcomes for this component include: regular attendance and tutoring sessions; an improvement in school grades; an improvement in reading and math test scores; fewer school absences; and maintenance of good conduct marks in school.

4. Client (Case) Management Services

A single point of contact coupled with responsibility for coordination of services leads to a more effective and effieient use of resources as well as providing the foundation upon which a plan of action can be built. Past practice has shown us that case management not only maximizes resources and client opportunities but decreases frustration within the system and contributes to long term success of any complex, dynamic initiative.

5. Sports and Fine Arts Programs

Part of a comprehensive model includes providing opportunities for youth in recreation that require discipline and teamwork. This includes sports and fine arts programs. The goals include: adoption of an art or sport to acquire new skills; regular attendance at activities centered around art or sport; acquisition of new skills; behavior reflective of positive self image e.g. head held up, sense of confidence, increase attention to personal care.

6. Home Visits and Teen Parent Support Group

These services are designed to reach out to young teens who may be at risk of becoming pregnant by providing nurturing, supportive guidance through a consistent connection with a peer and/or adult. The role of the home visitor is to provide support to the teen to access and carry through with other services and activities in the comprehensive model, with the goal of preventing pregnancy. Home visiting services can also function in a secondary prevention setting to reduce subsequent pregnancies in teens. The goals include: promote healthy pregnancy and birth outcomes; promote safe and nurturing environments for children by educating teen parents in child development, health, injury prevention and parenting skills; lastly, enhance the family's life course and development (furthering education, finding work and reducing subsequent pregnancies), by teaching family members how to access resources to reduce stress and promote healthy development for both the teen parents and children.

7. Mental Health Services

Are designed to meet the complex emotional and mental health needs of teens. Adolescence is a time of many changes. Research has shown that those teens with low resiliency are at greatest risk of suicide, substance abuse and other self destructive behaviors. To this end the mental health component is designed to assess teens for acute mental health needs and to provide professional social work with counseling services on-site, with referrals for more complex issues.

8. Medical and Health Services

Are designed to meet the primary health care needs of adolescents. Services need to include a complete social and family history and assessment; establishment of health goals; pregnancy prevention and planning including the on-site availability of contraceptives; confidential services and weekly meetings with a reproductive health counselor for teens who are sexually active. Recent research regarding the incidence and risk of HIV and other sexually transmitted diseases, points to the need to broaden the definition of 'sexually active' to include sexual activities in addition to intercourse. Outcomes will include the completion of an annual physical with the appropriate age and gender specific anticipatory guidance; adoption of an appropriate health goal (e.g. smoking cessation, weight reduction); postponement of sexual intercourse and other risk taking behaviors, or the increased use of contraception among those teens having intercourse and an overall decrease in the number of teen pregnancies. It is important to note that the later outcome is a long term outcome requiring a long term commitment to adolescent health.

Prepared by: Jill Ann Underhill, MS, CHES and Katie Dunn, RN, MPH
NH Department of Health and Human Services
Bureau of Maternal & Child Health

Section 402(a)(1)(A)(v): Establish goals and take action to prevent and reduce the incidence of out-of-wedlock pregnancies, with special emphasis on teenage pregnancies, and establish numerical goals for reducing the illegitimacy ratio of the State (as defined in section 403(a)(2)(B)) for calendar years 1996 through 2005.

New Hampshire's goals to reduce the non-marital birth rate are as follows:

1) By 2005 reduce the non-marital teen birth rate to 21.0 per 1,000 (baseline 1994 22.3 per 1,000).
2) By 2005 reduce the non-martial birth rate among women ages 20-24 to 33.0 per 1,000 (baseline data 35.1 per 1,000).

These goals correspond with the prevention programs and the target populations for those programs. The target populations are adolescents, pregnant women and women under age 26 who have young children. The goal for the reduction in the non-marital birth rate is conservative as New Hampshire's birth to non-married teens is the second lowest in the country. The estimated reduction is based on decreases in teen birth rates seen in New Hampshire over the last decade and anticipated modest, decreases over the next decade due to increased efforts to reduce teen births.

The goal for the reduction in non-marital births among women ages 20-24 focuses mainly on preventing subsequent births among women in this age group.

Because there are so many variables that can affect the birth rate and because it is very difficult to predict trends and changes, we will monitor the data and reevaluate the goals each year from 1997 to 2005.

The State of New Hampshire is actively involved in actions to prevent and reduce the incidence of teenage pregnancies. As part of Governor Merrill's Welfare Reform Council, an inter-agency task force, the Adolescent Parenting and Pregnancy Prevention Work Group (APPPWG) was established. The APPPWG is comprised of representatives of State agencies including the Department of Health and Human Services, the Department of Education, and Post-Secondary Education. Additionally there is representation from non-state agencies such as the Girl Scouts, the Welfare Directors' Association, UNH Cooperative Extension, and the NH Housing Finance Authority.

Plans are underway for four major initiatives. The first initiative is an extensive public information and education campaign with a particular focus on male responsibility. The second is an outreach initiative to schools and out-of-school youth. The third initiative is a kick off campaign conference in May of 1997. The purpose of the conference is to forge linkages with national pregnancy prevention efforts as well creating public/private partnerships in New Hampshire. The fourth major initiative is a demonstration project which implements and evaluates the model plan in a chosen community.

One component of the teen pregnancy prevention plan is to provide home visiting to teens who may be at-risk of becoming pregnant. The role of the home visitor is to provide support to the teen to access and carry through with the other services and activities in the comprehensive model, with the goal of preventing her from becoming pregnant.

Plans are underway to implement a model home visiting program in two communities for pregnant women and for women with young families in an effort to reduce subsequent pregnancies. The comprehensive goals of the program are to:

- Promote healthy pregnancy and birth outcomes,
- Promote safe and nurturing environments for children by educating parents in child development, health, safety and parenting skills,
- Enhance the family's life course and development (furthering education, finding work, and reducing subsequent pregnancies) by teaching family members how to access resources to reduce stress and promote healthy development for both the adults and children.

Section 402(a)(1)(A)(vi): Conduct a program, designed to reach State and local law enforcement officials, the education system, and relevant counseling services, that provides education and training on the problem of statutory rape so that teenage pregnancy prevention programs may be expanded in scope to include men.

The Department's public education and information campaign for the Teen Pregnancy Prevention initiative will have a special emphasis on male responsibility and will target men in their early 20s. The message regarding statutory rape will be woven into this campaign and law enforcement officials will be involved in the planning and implementation process.

The Department will review the efforts of other states currently addressing this issue in terms of education and enforcement of statutory rape laws.

Oregon Plan

The National Campaign to Prevent Teen Pregnancy
March 1997

FINAL DRAFT

Teen Pregnancy Prevention

Oregon Action Agenda ~ 1997

Call to Action

The Action Agenda '97, developed by a broad-based coalition at Governor Kitzhaber's request, seeks to solidify teen pregnancy prevention efforts by both local and state partners into a cohesive, integrated course of action for 1997 and into the future. In addressing the complicated and critical issue of teen pregnancy prevention, Governor Kitzhaber recognizes that only through coordinated effort can progress be made. The Action Agenda stresses the concept of shared responsibility:

- *Young females and males* must take responsibility for their decisions and the direction their lives are taking.
- *Parents* have the responsibility to provide support, supervision and guidance in developing their children's values and behaviors.
- *Schools and communities* have the responsibility to provide programs that allow all youth to become educated and understand the importance of delaying parenthood.
- *Governments* have the responsibility to implement appropriate policies that support comprehensive pregnancy prevention activities and to protect our youth from sexual abuse.
- *Leaders in government, education and health services* have the responsibility to provide focus and serve as catalysts for effective statewide action.

The strategies outlined in this agenda have been built upon years of effort throughout the state. Since the late 1970's, a large and diverse number of individuals and agencies have been working toward the goal of reducing teen pregnancy. In 1994, STOP (Sex, Teens & Oregon's Plan) was developed as a comprehensive plan for teen pregnancy prevention. Today, we will build upon this momentum.

Strategies for Action:

This Action Agenda focuses on prevention strategies. It is clearly understood that links between individuals, agencies and communities will be critical in addressing the underlying causes of teen pregnancy especially sexual abuse, sexual exploitation, drug and alcohol use, poverty and lack of economic opportunity.

Our ability to reduce teen pregnancy is directly dependent on our ability as a community to reduce these risk factors. Working together local and state efforts must address the connections between these primary causes and later risk-taking behaviors in order to generate the best solutions. To reduce teen pregnancy there must be a concerted effort on two levels:

- Local coalitions: Communities need to implement strategies and programs that are sensitive to local needs, character, & attitudes.
- Statewide efforts: The state needs to provide leadership, data, technical assistance, policy development & resources to support local efforts.

Together local and statewide efforts will concentrate on six strategies in confronting the primary issues surrounding teen pregnancy:

1. Supporting Positive Community Values and Norms
2. Skills for Life Instruction
3. Responsible Sex Education
4. STARS: Postponing Sexual Involvement
5. Contraceptive Access
6. Legal Issues and Protections

For more information please contact Mary Shortall, Department of Human Resources, at (503) 945-5725, mary.e.shortall@state.or.us or Karen Hubbard, Health Division at (503)731-4427, karen.j.hubbard@state.or.us

Strengthening Local Coalitions

Many communities currently have local teen pregnancy prevention coalitions including RAPP groups, committees operating in partnership with the Commission for Children and Families, local health departments, and community-based groups sponsored by schools, health departments, churches and non-profit, social service agencies.

These coalitions have autonomy in developing their own action programs. They can, however, increase their strength by integrating their efforts with the statewide team. Local coalitions are encouraged to engage in the following actions:

- Identify effective means of communicating with youth in their communities; use those means to deliver the messages of the statewide public awareness campaign.

- Strengthen membership of the local coalition by including members from the medical community and school boards.

- Target messages on responsible sexual behavior to males in school, out of school, and among the young adult population.

- Support development of STARS programs in their communities.

- Identify barriers for both males and females in the utilization of family planning services in their communities and work to reduce these barriers.

- Increase protective factors for youth by supporting structured environments which promote positive youth development through after school, evening, and weekend activities.

- Support parent education efforts to help improve family communication.

The State must also help to strengthen Oregon's local coalitions through the following actions:

- Provide technical assistance, support, and consultation to communities as they develop their locally selected strategies.

- Provide information, research, data, and best practices (models) to assist communities in identifying and implementing teen pregnancy prevention strategies.

- Monitor the progress of strategies that are being implemented in communities and provide special assistance if coalitions encounter difficulties.

For more information please contact Connie Carley, Commission on Children & Families at (503) 373-1570 x 224, connie_carley @class.orednet. org or Karen Hubbard, Health Division at (503)731-4427, karen.j.hubbard@state.or.us

1. Supporting Positive Community Values & Norms

The cornerstone of this strategy is a statewide public awareness campaign, supported by local community efforts that deliver the same messages. The campaign has three principal objectives:

1. Increase overall awareness of the problem.
2. Encourage cooperation within the community on addressing the issues.
3. Support parents and teens in individual efforts to reduce teen pregnancy.

Action Steps:

- Conduct eight focus groups to test messages with adults and youth. Develop a statewide message and marketing approach.

- Support a marketing team to guide development of the overall public awareness campaign.

- Seek support from federal and private sources to fund a campaign that has sufficient reach, frequency, and impact to change behaviors.

- Utilize funding from the Department of Human Resources to pay for initial focus groups and initial campaign planning.

- Request general fund dollars from the 1997 Oregon Legislature to ensure that the campaign continues year round at effective levels.

- Develop a community resource guide including a selection of materials and resources for technical assistance that local coalitions can tailor to their individual needs and situations.

- Coordinate Oregon's efforts with the National Teen Pregnancy Prevention Campaign.

- Utilize a balanced approach to achieve community acceptance and reach teens as well as adults with messages about abstinence, postponement, access to contraceptives for sexually active teens, male responsibility, family communication and parental involvement.

- Designate a lead agency to coordinate efforts of diverse groups on this issue.

Communities will use the best communication paths for their local areas to reinforce messages delivered by the statewide campaign and achieve maximum effectiveness.

For more information please contact Cindy Becker, Department of Human Resources at (503) 945-6707, cindy.becker@state.or.us or Karen Hubbard, Health Division at (503)731-4427, karen.j.hubbard @ state.or.us

2. Skills for Life

Skills for Life is an instructional strategy designed to provide youth with a solid framework for good decision-making skills. It seeks to enhance self worth and provide the tools to build confidence for positive participation in work, family, and community. Promoting sound planning for the future and accountability in connecting action and consequences is essential in giving both females and males opportunities for a positive life.

Action Steps:

• Work in collaboration with the Department of Education in selecting effective instructional programs to recommend to local teen pregnancy prevention advocates for use in their communities.

• Test pilot instructional program with a local high school and a community-based project. Integrate the pilot into current required course for ninth grade students.

• Stimulate and support local initiatives to improve skills for life instruction for all teens.

• Include skills for life training in plans for families developed by Adult and Family Services.

• Incorporate male responsibility into skills for life instruction including family communication skills, study skills and college preparation.

• Support programs for teen parents that help them make positive decisions and postpone a second pregnancy.

Expected Outcomes for Students Completing Skills for Life Instruction:

- **Know the importance of assuming the responsibility for personal choices.**
- **Understand short term and long term consequences of safe, risky and harmful behaviors.**
- **Know communication strategies for avoiding potentially harmful situations i.e. refusal skills and resistance to peer pressure.**
- **Know how to access community agencies that advocate for healthy individuals and families.**

For more information please contact Charlotte Hartwig, Adult & Family Serivces, at (503) 945-6737, charlotte.hartwig@state.or.us

3. Responsible Sex Education

Accurate, research-based sex education is an essential element in helping young people make knowledgeable decisions about their lives. Sex education programs can help parents and teens communicate about sex and improve decision-making skills.

Action Steps:

• Through the Department of Education, analyze the quality and type of responsible sex education offered in local school districts and recommend curricula evaluated as effective by the Centers for Disease Control, such as, but not limited to, *Reducing the Risk; Be Proud...Be Responsible; and Get Real About AIDS.*

• Support the Department of Education efforts to increase compliance with Oregon State law requiring sex education classes to be accurate and age-appropriate.

• Utilize School-Based Health Centers to reinforce sex education and abstinence goals through their their guidance and preventative health care services. Recognize that SBHCs also improve access to high-risk youth for ongoing reproductive health information and service intervention.

• Provide additional training to health educators and community advocates who want to become more proficient in delivering the curricula cited above.

• Provide technical assistance to schools desiring to enhance responsible sex education.

For more information please contact Peggy Holstedt, Dept. of Education at (503) 378-5585 x 601, peggy.holstedt@state.or.us

How Parents Feel About Responsible Sex Education

79% of those surveyed either strongly favor or somewhat favor requiring sex education be taught by schools
62% strongly favor teaching sex education in schools nationwide
65% strongly favor teaching sex education in schools in the U.S. Pacific Region
19% strongly oppose requiring sex education

from 4/96 polling data

4. STARS: Postponing Sexual Involvement

STARS (Students Today Aren't Ready for Sex) is an abstinence-based teen pregnancy prevention curriculum in which teen leaders from high schools teach sixth and seventh graders how to identify and resist pressures that lead young people into premature sexual involvement. As a skill-based program, STARS gives young people practice in how to say no. The objective of STARS is to help reduce teen pregnancy by reaching pre-teens before they become sexually active, teaching girls and boys how to postpone sexual involvement.

STARS is based upon the curriculum called Postponing Sexual Involvement (PSI) developed by Dr. Marian Howard of Emory University/Grady Memorial Hospital in Atlanta, Georgia. In Georgia, a five-year scientific evaluation of the pilot program showed a 33 percent reduction in teen pregnancy rates among those who participated in the abstinence curriculum.

Action Steps:

- Ensure continuation and quality delivery in all current STARS program sites and seek additional funding from the 1997 Legislature for 8 to 10 new state-funded STARS sites.

- Through the STARS Foundation, fund the five-year scientific evaluation of the STARS curriculum and, in conjunction with community partners, help new school districts around Oregon initiate the STARS program in 1997.

- As expansion occurs, place certified STARS trainers in five major regions around Oregon to provide training, technical support, and follow-up to ensure consistent quality in the delivery of the STARS program in their own regions.

- Collaborate with Multnomah County Health Department to develop and implement 8th grade booster sessions and improve the STARS program based upon implementation & outcome evaluations.

- Continue aggressive application for philanthropic trusts, foundation, and corporate monies.

- Encourage participation by the STARS coordinators in local Teen Pregnancy Prevention Community Coalitions to strengthen the comprehensive effort to reduce adolescent pregnancy.

- Partner with local hospital/health systems and businesses to ensure STARS is truly a community initiative, sustainable over the long-term.

In some school districts, staff implementing STARS have discovered that youth lacked sufficient understanding of anatomy and physiology to grasp the importance of an abstinence program. While information alone does not change behavior,adequate knowledge is a prerequisite to making sound decisions.

For more information please contact Kay Carlisle, Mult. Cty. Health Dept. at (503) 248-3663 x 8021, kay.s.carlisle@state.or.us

5. Contraceptive Access

A high priority must be placed on encouraging those teens who are sexually active to use family planning services. Services must be affordable, conveniently located, user-friendly to teens, and confidential.

Action Steps:

• Seek additional funds from the 1997 Oregon Legislature for contraceptive services delivered through the existing network of public family planning providers.

• Pursue a federal waiver to match these funds with federal dollars and use the funds to expand Medicaid eligibility for family planning services.

• Maximize the ability of School Based Health Centers to access high risk populations, both male and female, for more intensive educational and c clinical services.

• Provide technical assistance to local communities on assuring that services are accessible to sexually active teens. Encourage communities to include males in the services offered.

• Encourage use of condoms, in conjunction with other contraception, to lower the incidence of unintended pregnancies and HIV and sexually transmitted disease (STD)infection.

• Develop technical assistance that can be offered to Local Health Departments or designated community groups to support the placement of condom vending machines in places teens frequent, to reduce unintended pregnancies, increase male involvement, and help prevent HIV and STD infection among sexually active teens.

• Develop local and statewide outreach and public education efforts which help teens learn the importance of contraceptives and where to obtain them.

Actions and Outcomes in Oregon

In the 1995 Oregon Youth Risk Behavior Survey, 40% of teenagers reported they hsve had intercourse.
In FY 95-96, Family Planning clinics served 17,473 teens, averting an estimated 4,934 teenage pregnancies by helping sexually active teens switch to a more effective form of birth control.
In averting pregnancies, Family Planning clinics were able to prevent an estimated 2,201 abortions.

For every $1 the government spends on family planning services, $4.40 is saved on short term medical, welfare, and nutrition costs.

For more information please contact Anne Olson, E or Carol Elliot, Health Division, at (503) 731-4018, anne.h.olson@state.or.us, carol.j.elliot@state.or.us

6. Legal Issues and Protections

Some teen pregnancies result from criminal acts including rape, incest, abuse and exploitation. While criminal statutes are identical across the state, there is not equal enforcement of the statutes among and within each community.

Action Steps Under Consideration:

- Evaluate current statutory language and patterns of criminal behavior and prosecution as they relate to teen pregnancy

- Utilize local community decision making process, i.e. local interdisciplinary teams, to standardize the process of decision making for prosecution of sexual offense crimes.

- Make training available on date rape to youth and young adult coed groups.

- Provide young men on probation with specialized training on impulse control, conflict resolution, anger management, and physical and sexual abuse prevention skills.

For more information please contact Senator Kate Brown's Salem office (503) 986-1707, kbleg@aol.com or Andy Wright at (503) 986-1435, repbross@aol.com

Age of mother versus age of father in Oregon

For girls under age 15 who have given birth, where the fathers age is known*:
- **32% of fathers are under the age of 18**
- **68% of fathers are over 18**

For girls age 15-17 who have given birth, where the fathers age is known:
- **15% of fathers are under the age of 18**
- **85% of fathers are over 18**

***For girls under age 15 only 26.8% reported the age of the father. For girls age 15-17, 50.2% reported the age of the father.**

From Oregon Health Division statistics, years 1991-95

[END of PACKET]

HHS NEWS

182 For Bruce from Melissa

DRAFT

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

EMBARGOED FOR RELEASE
Monday, August 9, 1993

Contact: Melissa Skolfield
(202) 690-6853

WR-Teen Pregnancy

Teen-age mothers receiving Aid to Families with Dependent Children (AFDC) achieve and sustain significantly higher rates of school attendance and employment when they receive mandatory training and support services, according to a long-term study of one such program released today by HHS Secretary Donna E. Shalala.

The rigorous review of a unique welfare demonstration program in Illinois and New Jersey shows a 19 percent higher rate of success for its participants, measured in school attendance, job training or employment. The improvement begins almost immediately and persists even after two years, the study showed.

"The young mothers who participated in this study were first-time parents living in tough, inner-city neighborhoods with high unemployment rates, and many of them had dropped out of high school," Secretary Shalala said. "But despite those obstacles, this study shows that effective case management and mandatory education and training can help AFDC recipients take that first, important step toward self-sufficiency."

David Ellwood, HHS assistant secretary for planning and evaluation and co-chair of President Clinton's Working Group on Welfare Reform, Family Support and Independence, said the study is "significant because of its size and its rigor, in addition to its hopeful findings.

- More -

"This shows that large-scale work-oriented programs can succeed even under very difficult circumstances," Ellwood said. "Combined with improvements in child support collection and an expanded Earned Income Tax Credit, this approach has great potential for helping young parents escape dependency."

The 30-month study, conducted by a policy research firm under contract to HHS, tracked almost 6,000 young, first-time AFDC recipients in Chicago, Ill., and Camden and Newark, N.J., from late 1987 to mid-1991. Participation rates for the program averaged 89 percent.

Fifty percent of those who signed up were required to participate in education and training programs or face a reduction of approximately $160 in their monthly AFDC grant. The other 50 percent received regular AFDC services and served as a control group. Assignment was made by random selection.

Teen parents who participated in the enhanced services program received counseling and help with child care and transportation.

The 19 percent higher success rate for program participants reflects that two years after enrollment, 79 percent of the enhanced services group were in school, job training or a job -- compared to 66 percent of those receiving regular AFDC assistance. The pattern was similar across all three sites.

Case managers found several successful strategies for increasing and maintaining participation, including flexible schedules, on-site child care and informal group meetings to break down feelings of isolation.

The demonstration began in 1986, before the passage of the 1988 Family Support Act and implementation of the Job Opportunities and Basic Skills Training (JOBS) program. Unlike the evaluated demonstration program, which used a nonselective approach and required all new teen-age mothers to participate, state JOBS programs generally exempt recipients who have children under age 3; have health problems; are pregnant; or must care for a sick family member.

Overall, 62 percent of those who joined the demonstration program were warned at some point of possible sanctions; more than one-third had their grants reduced at least once. Nevertheless, the vast majority of young mothers had extremely positive feelings about the program.

The study released today is the first phase of a major eight-year evaluation effort, and relied on surveys, administrative records, interviews and focus groups.

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OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

WR
Teen Pregnancy

September 16, 1993

MEMORANDUM FOR PREVENTION ISSUE GROUP MEMBERS

FROM: Richard Bavier RB

SUBJECT: Materials by Dr. Laurie Zabin

Enclosed are copies of some relevant articles by Dr. Zabin and the text of her remarks to us. The remarks seem to me especially helpful.

I am also enclosing a summary of the Empowerment Zone legislation that Sheryll Cashin supplied after our last meeting.

At this point, it looks unlikely that I will have a draft of a combined options paper for the group to review this week. I will shoot for the middle of next week.

Patricia Sosa, who is doing public outreach for the welfare reform working group, is trying to arrange presentations for us by the Alan Guttmacher Institute, and perhaps some others, on September 22. To allow enough time for presentations and discussions, we probably would try to get the meeting started at 2:00 p.m., rather than our usual 2:30 p.m. I will provide more definite information early next week.

JOURNAL OF RESEARCH ON ADOLESCENCE, 3(1), 67-86

Do Adolescents Want Babies? The Relationship Between Attitudes and Behavior

Laurie Schwab Zabin, Nan Marie Astone, and Mark R. Emerson
Department of Population Dynamics
Johns Hopkins School of Hygiene and Public Health

In this study we explored the effects of attitudes toward childbearing, contraception, contraceptive efficacy and abortion, and perceptions of partners' attitudes on contraceptive use, conception, and childbearing among 313 young inner-city Black women (≤ 17 years) who presented at a clinic for pregnancy tests and were followed for 2 years at 6-month intervals. A multi-item construct defining young women's desire for pregnancy was created with factor analysis; its multivariate relationships to the outcome behaviors suggested the substantive importance of ambivalence, which was as significantly related to childbearing as the positive desire to conceive. We discuss methodological issues in assessing "wantedness" and implications of the findings for program and policy.

There is considerable disagreement about whether young women conceive in adolescence by accident or by design. Many people who work with adolescents believe that the young women they serve often want a baby during their early years. This belief contrasts sharply with surveys that have suggested that the vast majority of adolescent conceptions are unintended. The subject has implications for the nature and even the presence of preventive interventions but has not been well understood.

There is a complex relation between a young woman's desires, or ambivalence, with respect to childbearing and the decisions and behaviors that result in childbirth. The fact that she answers in the affirmative

Requests for reprints should be sent to Laurie S. Zabin, School of Hygiene and Public Health, Johns Hopkins University, 615 North Wolfe Street, Baltimore, MD 21205-2179.

when asked if she wants to conceive does not fully explain the role of her predilections, especially if she already knows or suspects she is pregnant. To properly understand the relation between her attitudes and her contraceptive and fertility behavior requires that questions such as the following be explored: Is her desire to avoid pregnancy, her negative attitude, strong enough to motivate action? How does she perceive her partner's wishes? Does that perception coincide with her own wishes? Does it reinforce them? Do her attitudes about other, related subjects have an impact on her sexual and contraceptive behavior? If so, do they mediate between the desire to avoid pregnancy and the adoption of preventive behaviors or are their effects independent? These questions are not unique to adolescent populations or to demographic analysis. They are part of a larger area of inquiry: the generic relationship between attitudes and behavior and, more specifically, fertility behavior, a subject that has been addressed in many different frameworks.

In this study we explored the relation between young women's attitudes toward conception, abortion, and contraception and the behaviors that lead to childbearing in a sample of young inner-city Black women. Our results suggest that young women demonstrate considerable ambivalence about conception and about other fertility behaviors even when they give straightforward replies to direct questions that address their attitudes. Our findings imply that the strength of motivation, not merely its direction, are critical to their fertility behavior. Social-psychological models of the determinants of adolescent childbearing would benefit from positing a role for ambivalence and from the development of appropriate constructs to assess it.

THE LITERATURE

The usual definition of unintended births within a given population is the sum of (a) births to women who do not wish to have any (more) children now or in future, defined by the National Survey of Family Growth (NSFG) as "unwanted" (National Center for Health Statistics, 1990) and (b) births to women who want to be mothers (again) some day but not at the time of conception. Births in the latter category are sometimes referred to as "mistimed."

Most births to adolescents are unintended (Hayes, 1987). An estimate from a 1979 national probability sample of the percentage of births to adolescents (aged 15–19) that were unintended is 82% (Zelnik & Kantner, 1980). Births to older teens were more likely to be intended than births to young adolescents; therefore, the percentage of births that

were unintended was probably higher among women aged 17 years and younger than among those aged 15–19. A recent analysis of data from the NSFG (National Center for Health Statistics, 1990) indicated that the level of unintended birth among never-married 15- to 19-year-old women rose from 79.2% in 1982 to 86.7% in 1988. The majority of unintended births to teenage women were mistimed (i.e., the women reported that they did want a baby someday but not at the time of conception).

Estimates from the same national probability samples suggested that the percentage of births to Black adolescents that were intended was lower than that for the total population: 10.4% versus 13.3%. Another racial difference was that a larger percentage of Black unintended births were "unwanted" rather than mistimed (National Center for Health Statistics, 1990).

Although relationships between intentions and behaviors are of considerable interest, it is hardly surprising that in most areas of human conduct, they are often at variance. The expected relationship between the intention to have a child and the choice of pregnancy outcome is supported by cross-sectional data, which indicate that those with unintended pregnancies were more likely to abort and those with intended pregnancies were more likely to carry to term (Zelnik et al., 1981). There were many, however, who elected to carry a child despite their expressed desire to avoid conception. In a sample of inner-city Black teens presenting for pregnancy tests, we reported that more than 31% of those who elected to carry their pregnancies told us, before their pregnancies were diagnosed, that they believed a baby would present a problem and an abortion would not; only 4.5% said they wanted to bear a child (Zabin, 1990).

Differences between what people say they intend about childbearing and what they actually do are not new. As early as the 1970s, because of observed discrepancies between desired family size and fertility behavior, a scale for refining the assessment of preferences was devised for use in the NSFG. This method, described by Coombs (1974, 1978, 1979), showed that a statement of desired family size generally indicated a range of choices or bias, not a point value. Coombs's longitudinal research suggested the importance of factors other than preference on "unfolding" fertility histories. Similarly, Presser (1974) identified the weak motivation to avoid pregnancy as an essential factor in unwanted first births. Thus, the notion that a range of associated attitudes affect the translation of fertility desires into fertility behavior is well accepted. Two factors, then, that may help explain the difference between stated intentions and behavior are (a) attitudes toward other aspects of reproductive behavior (e.g., contraception or abortion) and (b) the

strength rather than merely the direction of one's intention to become a mother or of one's attitude toward reproductive behavior.

With respect to the former, negative perceptions of contraceptive efficacy, side effects, and safety appear to be obstacles to contraceptive use among women of all ages in the U.S. (Severy & McKillop, 1990; Silverman, Torres & Forrest, 1987). In a high school study of young Black women, fear that contraception "is dangerous" emerged as the principle reason for delay in attending contraceptive clinics (Zabin, Stark, & Emerson, 1991). In turn, perceptions with regard to method efficacy have a significant effect on method use (Clark, 1981).

With respect to the latter, the strength of the attitude toward reproductive behavior or the intention to avoid a birth must be considered. Empirical work within two particular theoretical traditions support this proposition. The prominent health belief model (Becker, 1974; Janz & Becker, 1984), which has been applied to contraceptive use (Nathanson & Becker, 1983; Rosenstock, 1974), is one. This perspective states that, even among those who do not want to conceive, pregnancy has to be "threatening" enough to outweigh other countervailing factors. These factors include, among others, the attitude of one's partner toward sex and contraception and the cost and availability of contraception. Jaccard, Helbig, Wan, Gutman, and Kritzsilverstein (1990), working in the social psychological tradition of Fishbein (1972), suggested that when the desire to use contraception is relatively weak, there are important mediating factors between attitude and behavior, factors that may have negligible effects when the strength of the desire to avoid conception is high. Jaccard et al. cited the work of Snyder and Kendzierski (1982), who also proposed that attitude "salience" moderates the attitude-behavior relationship.

The idea that an intention or attitude has to have a certain strength in order to exert a perceptible effect on behavior is particularly helpful when addressing the question at hand: Why are so many young Black women having babies they claim they did not intend to have? There are several reasons to suspect that ambivalence about childbearing may be higher among inner-city Blacks than for groups in different social contexts (Hogan, 1983, 1984). These young women live in communities that are frequently isolated from mainstream social institutions, particularly good schools and jobs (Wilson, 1987). Anderson (1989) suggested that teenagers of all races and social class groupings experience intense, contradictory emotions regarding their sexual behavior and confusion about how best to please their sexual partners. This, he claimed, is an inevitable result of the biological aspects of adolescence and the gender role patterns of American society. The difference, Anderson went on to say, between middle-class youths and inner-city youths is that the former have strong hopes for economically self-sufficient adult lives that will help them deal with their ambivalence. This source of stability is absent for inner-city teenagers because of their lack of realistic prospects for participation in the mainstream economy.

METHOD

Conceptual Framework

In our model, whether a person performs a given behavior or set of behaviors is affected by the *strength* of his or her attitudes toward them, as well as by the *direction* of those attitudes. Specifically, we hypothesized that behavior leading to childbearing would be positively associated not only with whether the young woman says she wants a baby now but also with how strongly she feels about it and how she views other aspects of reproductive behavior that are involved in avoiding pregnancy. According to this view, a negative attitude toward childbearing must reach a certain level of strength in order to motivate the complex set of behaviors necessary to avoid childbearing. In addition, an unequivocal belief in the efficacy of contraception, strongly positive attitudes toward contraception and abortion, and the perception that her partner does not want her to conceive will also have a positive effect on her contraceptive use and her successful avoidance of an unintended pregnancy. Her own basic attitude toward childbearing will be strengthened by independent, unambivalent attitudes in these associated areas.

We define a person who has a strong attitude (regardless of valence) toward a particular behavior or object as one who responds consistently to a set of questionnaire items that tap that attitude. By contrast, we define a person who is ambivalent toward that behavior or object as one whose answers to the same set of questionnaire items form an inconsistent pattern. An alternative definition of a person with ambivalent attitudes could be one who responds to the same questionnaire item differently at different points in time. Our concern in this research was with attitudes toward having a child, attitudes that are likely to shift over an individual's age or life experience. (References in our review of the literature to the difference between unwanted and mistimed births suggest the importance of timing.) Therefore, we focused in this analysis on consistency among related items asked at the same time.

Data

The data for this study were drawn from a sample of 313 Black inner-city adolescents 17 years of age and under who presented for pregnancy

ests at one of two sites in Baltimore (Zabin, Hirsch, & Emerson, 1989; Zabin, 1990). Three hundred fifty-nine previously childless young women were interviewed at baseline while awaiting the results of their ests; they were followed for 2 years regardless of whether their tests were positive or negative. During the 2 years, they were interviewed by elephone at 6 months and 18 months and in person at 1 and 2 years. Of he original group, the 87.2% who had 2-year interviews were included n the final sample.

These data have compelling advantages for a study like ours. The biggest advantage is the longitudinal nature of the study design. We measured the strength of a young woman's attitude at one time and examined its effects on behavior subsequently rather than cross-sectionally. Another advantage concerns the homogeneity of the sample. Table 1 shows the percentage distributions of age and socioeconomic background variables in the sample. These distributions reflect the relatively high levels of economic disadvantage in the sample: Almost 50% of the respondents were behind in school, more than 60% were receiving some form of public assistance, and less than 25% were from intact families. It is undoubtedly the case that the ability to enact one's preferences depends on one's social and economic resources. In the U.S. today these, in turn, depend on one's race or ethnicity, social class, and residence (Wacquant & Wilson, 1989). Holding these factors

TABLE 1
Percentage Distribution of Respondents by Age and Socioeconomic Background Variables in the Sample

Variable	%	*n*
Age		313
≤ 13	6.0	
14	15.0	
15	23.3	
16	24.9	
17	30.7	
Age for grade		305
On time or ahead	54.1	
Behind	45.9	
In school year of test		312
Yes	94.2	
No	5.8	
On public assistance or Medicaid		310
Yes	61.9	
No	38.1	
Father in home		313
Yes	24.3	
No	75.7	

constant in studies of the attitude–behavior connection is wise in order to ensure that variation in the participants' ability to enact their preferences does not obscure the results or even appear to disconfirm the attitude–behavior connection itself.

The homogeneity of the sample, however, raises questions about the generalizability of our findings. As limited as the population may be, racially, geographically, and economically, it is representative of a population known to be at high risk for early sexual onset, unintended conception, and adolescent childbearing (Zelnik, Kantner, & Ford, 1981). Therefore, although we make no claims for broader generalizability to the country as a whole, there is little reason to believe that the findings would not have some relevance to others who share these background and behavioral characteristics.

Variables

Dependent variables. We considered three outcome variables: contraceptive use, pregnancy subsequent to the event, and childbearing. We scored a respondent as an effective contraceptor if she reported (a) using an effective method all or most of the time and (b) using an effective method at last intercourse. The respondent was given a cumulative 5-point score ranging from 0–4. She received a 0 or 1 on each of four variables: use at last intercourse (*yes* [1] or *no* [0]) and regularity of use (*always* or *most of the time* [1] or *never* or *some of the time* [0]), each measured at two points in time – the 1- and 2-year follow-up surveys.

The second dependent variable was dichotomous, representing pregnancy subsequent to the index event – the pregnancy test visit at which the young woman was admitted to the study. We defined this as becoming pregnant at some time during the observation period, following but not including the index event. The final dependent outcome, also dichotomous, was childbearing. We coded a girl as a childbearer if she bore a child at any time during the observation period, whether as an outcome of a pregnancy diagnosed at the index event or of a later conception. We included births that were outcomes of pregnancies diagnosed at the index visit because the attitude was assessed before respondents knew the results of the tests and, for those whose tests were positive, before they made the decision to carry or not to carry the pregnancy to term. Thus, there was still time for their attitudes to affect their behaviors. All three outcome variables were constructed from data collected from the follow-up studies.

Independent variables. The five independent variables were measured as of the baseline survey. To construct four of them, we first

selected questionnaire items that were indicators of the respondent's attitudes toward four objects: (a) having a baby in general, (b) the efficacy of contraception, (c) the use of contraception, and (d) having an abortion. The wording of these items is given in Table 2. The choice of items to define each attitude was based on four factor analyses, one for each attitude object. The results of these analyses indicated that within each of the four groups, the items listed in Table 2 were measuring the same dimension.[1]

The second step in constructing the first four independent variables was to code a respondent as having a positive attitude toward the object if she answered each item positively and negative if she answered each item negatively. She was considered ambivalent if her responses did not reflect a consistent viewpoint.

We also considered the effects of a fifth independent variable: the respondent's perception of her partner's desire for conception. We included this indicator because we believe that one source of ambivalence in young women's attitudes toward conception, pregnancy, and childbearing may be a difference of opinion between her and her partner on the desirability of conception or, indeed, an ambiguity in her reading of his opinion.

Analytic Techniques

The inclusion of ambivalence as an interesting category is new; it is generally seen as an artifact of the survey process. That is, when a single item is used to measure "wantedness," a young woman's desire to conceive a child would be treated as ambivalent only if she answers neither yes nor no but "don't know" to that item. Therefore, before reporting the results of our study of the relationship between ambivalence and fertility-related behavior, we present some univariate tabulations on ambivalence itself. We focus in this phase of the analysis on her attitude toward having a baby. We move from there to bivariate tabulations between the five independent variables and the three outcomes. In this step of the analysis, we report whether a statistically significant relationship between an independent and dependent variable emerged using the chi-square statistic. The final step was to evaluate all five independent variables' effects on each of the three outcomes simultaneously in a multivariate regression model. One of our outcomes, contraceptive use, was an ordinal variable; we therefore used ordinary least squares estimation to evaluate the effects of the independent variables. The other two outcomes were dichotomous; in these analyses, we used logit regression with maximum likelihood estimation procedures. We evaluated the effects of the coefficients of the independent variables using the *t* test.

Even within our relatively homogeneous sample, some girls were relatively better off economically (although few would be classified as well-off in general) and the respondents were of different ages. To ensure that our findings did not merely reflect these within-group differences, we ran each of our multivariate models controlling for age and all the background variables displayed in Table 1.

[1]We used factor analysis as a data reduction technique; the constructs we used were not factor scores. Factor loadings and other results are available on request.

TABLE 2
Definitions of Attitudinal Variables Incorporated in the Analysis of Wantedness

Variable	*Definition*
Wantedness	Before you thought you were pregnant did you want to become pregnant? Yes or no
	If you found you were pregnant would you be . . . (ranging from *very happy* to *not at all happy*)
	Do you think having a baby now would be a problem to you? Yes or no
Contraceptive efficacy	The pill (and the condom) is (very good/good/fair/poor) at keeping a girl from getting pregnant.
	The birth control pill is safe if it is prescribed by a doctor after a check-up. True or false
Contraceptive attitude	I would only have sex if one of us was using some kind of birth control. True or false
	Guys understand if girls say "no" to sex until they have some kind of birth control. True or false
Abortion attitude	Do you think having an abortion now would be a problem for you? Yes or no
	It is all right for a woman to have an abortion if . . .
	_____ she doesn't want to have a child at the present time
	_____ she wants an abortion for any reason.
	Coded positive to abortion if "yes" to both these reasons, which were included on a list of many possible reasons.
Partner's attitude	Did (your partner) want this pregnancy? Yes or no
	For the subset asked at follow-up: At any time since you started sex, have any of your partners wanted you to get pregnant? Yes or no

RESULTS AND DISCUSSION

Bivariate Relationships

Only a small number, 8.5%, of respondents reported at baseline that they wanted to be pregnant. A larger minority, 31.1%, believed that

heir partners wanted them to conceive. Among the subset asked at the end of the observation period if they had ever wanted to become pregnant or if they believed their partners had ever wished them to conceive, a larger percentage answered affirmatively (19.8% and 46.6%, respectively); this was not surprising in view of the longer reference period, the increase in their ages, and for some the completion of their schooling during that period. At follow-up, they still believed that their partners wanted them to conceive more than twice as often as they reported wanting to conceive themselves. Although some young women changed their minds between baseline and the 2-year follow-up, few respondents answered the later question in a way that directly contradicted the earlier (i.e., only 4.0% of those who had responded positively in the baseline interview said at follow-up that they had never wished to conceive). Among the subset asked 2 years later if they had wanted to conceive at the specific time of the index event, 11.0% contradicted an earlier reply.

Only 3.3% of the respondents answered the relevant question at baseline by saying they did not know whether they wanted to be pregnant. Thus, when a single question was used to determine their desires, few appeared unsure. However, their responses to other questions suggested considerable ambivalence: When inconsistent responses to the three questions that formed the new, factored construct were treated as ambivalence, almost half of the respondents (47.3%) fell into that category.

If there is a positive relationship between the desire not to have a child and behaviors that are associated with avoiding childbearing, one might expect it to be most evident among those whose attitudes are consistent. Table 3 reflects the relationship between wantedness and each of the three outcome measures described earlier: consistent use of contraception, pregnancy subsequent to the index event, and childbearing at any time in the course of the study. In Table 3, desire for a pregnancy is defined in two ways: In the top and middle panels it is based on answers to the single direct question and in the bottom panel on the composite variable. When all three replies to the single direct question are used, respondents in the middle category appear at highest risk; although numbers are small, the girls who "don't know" how they feel are least likely to use contraception and most likely to become pregnant and to bear a child. In the middle panel, the same question is coded "no" if the girl gave a negative reply. The few who "don't know" are included with those who claimed to want a child in order to test the strength of the desire to avoid pregnancy among those who expressed that desire. Differences in the outcome variables were in the expected direction but, with two of the outcomes, the differences were insignificant. The lower

TABLE 3
Effective Contraceptive Use, Pregnancy and Childbearing by Wantedness Attitude, Measured by a Single Question* and a Multidimensional Construct

Wantedness	n	% *Effective Use*	% *Subsequent Pregnancy*	% *Childbearing*
Single question				
Yes	26	15.0	42.3	46.2
Don't know	10	11.1	90.0	87.5
No	271	38.8 **	43.9 *	51.9
Single question				
Yes/don't know	36	13.8	55.6	55.9
No	271	38.8 *	43.9	51.9
Multidimensional construct				
Yes	15	0.0	66.7	66.7
Ambivalent	145	30.2	44.8	64.8
No	146	46.2 **	43.8	38.2 **

*See Table 2 for wording of single and supplementary questions.
*$p \leq .05$. **$p \leq .01$.

panel shows the relationship between the new wantedness concept, defined by three related variables, and the same three outcomes. Although few girls reported a positive desire for a child, those with consistent motivation to avoid childbearing appeared to do so significantly better than their ambivalent peers.

Thus, the wantedness concept was significant in its bivariate associations with the use of effective contraception and childbearing; its relationship with subsequent pregnancy was not significant. In the model we were testing, however, we suggested that the effect of wantedness on behavior might be affected by other attitudinal constructs, specifically, perceptions of partners' wishes, perceptions of the efficacy of contraception, and attitudes toward contraception and abortion.

A young woman's perception of her partner's attitude toward childbearing appeared similar to her own attitude in its bivariate contribution to her contraceptive use. Among the young women for whom we had the measurement at two points in time (this was the subset for whom we knew the consistency of the respondent with respect to her partner's attitude), the relationship was highly significant: Whereas 60% were effective users among those who consistently believed their partners were opposed to childbearing, only 25% were effective users among those who consistently saw their partners as

being favorable to childbearing ($p \leq .01$). Similarly, the contribution of that perception to subsequent pregnancy and to childbearing was significant only in that same subset.

In a biviariate relationship, belief in the efficacy of contraception was significant in its association with childbearing (see Table 4); although this variable's relationship with the other outcomes was in the expected direction, their relationships did not attain significance. The respondent's attitude toward birth control was significantly associated with her use of contraception; it was not significantly associated with the other outcomes, but the direction of the relationship was as predicted. The high-risk status of those whose attitudes were ambivalent was again evident. Conceptually, the construct that taps the acceptability of abortion can best be measured in relation to birth outcome; contraception or pregnancy might be only indirectly affected. Table 4 shows that its association, as expected, was significant in relation to childbearing but not to contraception or pregnancy.

Multivariate Models

Multivariate models were run using only the three dependent variables and five independent attitudinal variables; they were rerun incorporating the background variables reported in Table 1. Because the

TABLE 4
Percentage of Effective Contraceptive Use, Subsequent Pregnancy, and Childbearing by Attitude Toward Contraceptive Effectiveness, Contraceptive Use, and Abortion

Independent Variable	*n*	% *Effective Use*	% *Subsequent Pregnancy*	% Childbearing
Contraceptive effectiveness				
Negative	8	33.3	75.0	62.5
Ambivalent	169	34.9	42.6	57.5
Positive	119	39.4	46.2	42.2
Contraceptive use				
Negative	77	32.3	41.6	49.3
Ambivalent	123	34.3	52.8	58.2
Positive	107	42.2	39.3	47.2
		*		
Abortion				
Negative	39	37.5	48.7	57.4
Ambivalent	174	30.3	46.0	56.7
Positive	91	49.3	42.9	40.0
				*

*$p \leq .05$.

direction and significance of the findings were essentially the same, we report in Tables 5–7 only the coefficients from the models that included the background variables.

In the model with contraceptive use as the outcome variable, only the wantedness construct and the young woman's attitude toward contraception were significant (see Table 5); wantedness had the larger and more significant effect. The strength of a young woman's desire to avoid childbearing was thus an important dimension in her adoption of a protective regimen. The effects of that attitude appeared to be linear: The more she wanted to conceive, the less likely she was to use contraception consistently and vice versa. This was not the case with her contraceptive attitudes. Only those with consistently positive attitudes toward contraception were different from their peers; those whose attitudes were negative, and those in the ambivalent (omitted) category did not differ significantly from one another. Furthermore, an exploration of alternative models suggested that attitudes toward contraception are exogenous to the relationship between wantedness and the use of birth control: A girl's desire for a pregnancy and her attitude toward contraception were not significantly correlated. Omitting contraceptive attitudes from the model shown in Table 5 did not reduce the effect of

TABLE 5
Ordinary Least Squares Regression Coefficients and Standard Errors of Contraceptive Use on Attitudinal Construct

Variable	*B*	*SE*
Wantedness attitude (ambivalent omitted)		
Want pregnancy	−0.97**	0.39
Don't want	0.38*	0.17
Contraceptive attitude (ambivalent omitted)		
Positive	0.44*	0.18
Negative	−0.31	0.20
Contraceptive efficacy (ambivalent omitted)		
Positive	−0.10	0.17
Negative	−0.21	0.53
Abortion attitude		
Positive	0.25	0.18
Negative	0.22	0.25
Perception of partner's attitude		
Wants pregnancy	−0.04	0.19

Note. $R^2 = .232$, $F = 3.340$, Significance $F = .0000$, $N = 313$. Effects reported are net of background variables displayed in Table 1.

*$p \leq .05$. **$p \leq .01$.

TABLE 6
Logit Regression Coefficients and Standard Errors of Probability of Becoming Pregnant Subsequent to the Index Event on Attitudinal Constructs

Variable	β	SE
Wantedness attitude (ambivalent omitted)		
Want pregnancy	1.07	0.63
Don't want	−0.05	0.26
Contraceptive attitude (ambivalent omitted)		
Positive	−0.64*	0.29
Negative	−0.40	0.31
Contraceptive effectiveness (ambivalent omitted)		
Positive	0.21	0.26
Negative	1.34	0.88
Abortion attitude (ambivalent omitted)		
Positive	−0.07	0.28
Negative	0.36	0.38
Perception of partner's attitude		
Wants pregnancy	−0.18	0.30

Note. Model $\chi^2(22, N = 313) = 23.82$, $p = .36$. Effects reported are net of background variables displayed in Table 1.
*$p \leq .05$.

wantedness on the probability of consistent contraceptive use (tabulations not shown).

Bivariate relationships showed a minimal effect of wantedness on the probability of pregnancy at some time subsequent to the index conception. Indeed, few of the attitudinal constructs showed significant relationships with that outcome. However, in the comprehensive model (see Table 6), contraceptive attitudes became significant. Once again, as when contraceptive use was the outcome, these attitudes were significant only if they were consistently positive. Furthermore, the odds of becoming pregnant tripled (tabulations not shown) among those who said at baseline that they wanted to conceive; the strength of this relationship approached significance ($p = .09$).

With childbearing as the dependent variable, wantedness, the efficacy of contraception, and the respondent's attitude toward abortion were significant (see Table 7). Young women who did not want to conceive were clearly different from those who did and from those who were ambivalent; they were much less likely to conceive. The log odds suggested that an adolescent was three to four times as likely to bear a child during the 2-year observation period if her baseline attitudes were

TABLE 7
Logit Regression Coefficients and Standard Errors of Probability of Childbearing on Attitudinal Constructs

Variable	β	SE
Wantedness attitude (ambivalent omitted)		
Want pregnancy	−0.27	0.65
Don't want	−1.22*	0.29
Contraceptive attitude (ambivalent omitted)		
Positive	−0.44	0.31
Negative	−0.39	0.34
Contraceptive efficacy (ambivalent omitted)		
Positive	−0.61**	0.28
Negative	−0.20	0.83
Abortion attitude (ambivalent omitted)		
Positive	−0.62**	0.31
Negative	−0.06	0.41
Perception of partner's attitude		
Wants pregnancy	−0.21	0.33

Note. Model $\chi^2(22, N = 308) = 62.64$, $p = .0000$. Effects reported are net of background variables displayed in Table 1.
*$p = .0000$. **$p \leq .05$.

supportive of childbearing than if they were not (tabulations not shown). Belief in the efficacy of contraception and supportive attitudes toward abortion were also significant. In each case, the role of ambivalence was underscored by these findings: Those with ambivalent attitudes were not different from those whose attitudes were negative. Only those with consistently positive attitudes toward these interventions were significantly less likely to conceive. Thus, only when a young woman unequivocally wanted to avoid childbearing, or was unequivocally positive toward contraception and abortion, did her attitude appear to have a significant effect on her behavior.

In no case, whether a young woman's perception was ambivalent or unequivocal, did her perception of her partner's wishes appear to have a significant impact on her behavior. Although we reported earlier that it was much more common for her to believe that her partner wanted her to conceive than it was for her to wish to do so herself, these two attitudes were highly correlated. When her perception of her partner's attitude was omitted from the model, the beta coefficient of her own attitude toward childbearing was reduced by less than 7% (tabulations not shown). Thus, the effects of her attitude were rarely mediated by her

perceptions of his attitude; his desires, as she perceived them, did not appear to be an independent determinant of her contraceptive or fertility behavior.

CONCLUSION

In a homogeneous population such as this, with a high risk of pregnancy and childbearing, it cannot be expected that subjective attitudes, even when measured by better scales than ours, could explain what is primarily accounted for by background, educational and structural variables, and by access to preventive services. Although we did control for several background characteristics, we did not attempt to tap many of the factors that can affect the outcome variables: contraceptive use, pregnancy, and childbearing. The question we examined here was whether attitudes would be a contributing factor at all, with significant influence on the behavioral outcomes of interest. We sought to use a parsimonious selection of responses to determine the potential impact of a young woman's attitude toward childbearing, and the effects of her perception of birth control and of her partner's attitude toward childbearing, on the probability of contraception and conception. Similarly, we explored the impact of the same variables plus her attitude toward abortion on her childbearing behavior. Our conclusions were both methodological and substantive, with implications for the domains of research, service, and public policy.

Implications for Research

When wantedness was defined by a single variable as it is in numerous studies, its effect on conception was either insignificant or ambiguous, depending on how it was coded. Few girls said they wanted to be pregnant and few said they did not know whether they wanted to or not, but many conceived. When the concept of wantedness was defined with several variables that appeared to express a single attitudinal dimension, the findings demonstrate a distinct effect of attitude on behavior, an effect that became more evident the less ambivalent the attitude. Large proportions of the girls who answered the direct question in the negative were ambivalent, as we defined it, and their rate of conception was high. Using the formulation stated here, a consistent desire to avoid pregnancy had a significant effect on contraceptive use and childbearing. Methodologically, this analysis suggests the importance of using more than a single item when treating measures as subjective as attitudes and perceptions. The need for multiple measures is well understood in psychological instrumentation. Unfortunately, it is often neglected in sociological explorations of the fertility aspirations of adolescents. It will continue to be neglected if major data collection efforts do not begin to include multiple-item scales on their questionnaires.

Substantively, these data suggest the importance of ambivalence itself in understanding young women's childbearing behavior. The observation that many inner-city girls seem to want a child may not be as contradictory to the findings of national surveys as it appears. The fact that the overwhelming majority of young women said they did not want to conceive does not mean that they were unequivocal about childbearing. In our sample, despite the small number who "wanted" a child, the majority of young women gave ambivalent responses once the concept was more adequately defined. The roots of that ambivalence—the degree to which it reflects the contradictory messages to which they are exposed, the frustrations they experience as they contemplate the future, or their individual timetables of cognitive and physical maturation—are all areas that must be explored. However, it is clear that ambivalence itself is an aspect of attitude that has substantive importance; it cannot be treated as an artifact of the research process.

The role of young women's perceptions of their partner's attitudes is apparently limited, although the belief that their partners want them to conceive appears extremely common. At the end of the 2-year observation period, as at the beginning, a girl was much more likely to believe her partner wanted her to become pregnant than to wish to do so herself, even though she might have moved to a stage in life at which childbearing appeared to be more appropriate (e.g., she might have graduated from high school or become employed). Bivariate relationships between a girl's perception of her partner's wishes and her behavior appeared to be in the expected direction. As in the case of her own attitudes toward conceiving, with which it was significantly correlated, ambivalence in her perception of her partner's attitude had the same effect on her contraceptive use and childbearing as the belief that he actually wanted her to become a mother. It might be that these perceptions were merely another expression of her own ambivalence, or it may be that she found it easier to acknowledge her belief that he wanted a pregnancy than to admit that she wanted one herself. In any case, the frequency with which this perception emerged in this population suggests that partner effects require further investigation, perhaps in data that can probe their quality as well as their direction.

Implications for Service and Public Policy

As suggested at the outset, the relationships we explored here have implications for intervention. (The degree to which young women want

to conceive may have implications for whether one seeks to intervene at all. Not only a girl's age but also her level of commitment to pregnancy are important factors in the design of preventive programs for her.) If, at a minimum, service providers wish to explore a young patient's motivation to conceive, our methodological findings suggest a more effective means of assessing that motivation than a single direct question. Pregnancy counselors know how weak a predictive tool that question is: The fact that a young woman says she does not want a child does not mean that she will adopt protective behavior. Because these data suggest that if a young woman is unambiguously committed to preventing a pregnancy the association between attitude and behavior becomes significant, it may be that in strengthening that commitment counselors can play their most effective role. Although more work is needed to develop an appropriate means of assessing the attitudes we explored here, the construct we have used may help counselors estimate the strength of a young client's commitment with a few probing questions. Similarly, the implications of a young woman's assumptions about her partner and the ambivalence so often associated with her perceptions of his attitudes affect her fertility behavior in ways a counselor might well help her to explore.

The models developed here suggest that there are other belief systems that also influence these young women's behaviors. When contraceptive use was the outcome variable, a young woman's attitude toward contraception was, not surprisingly, the most important of these perceptions. Her attitude toward abortion and contraceptive efficacy became significant when childbearing was the outcome of interest. The data suggest that fear of contraception or distrust of its side effects and efficacy can have powerful consequences that should not be ignored. Nonetheless, expensive media programs in many parts of the country, seeking to reduce the level of adolescent parenthood, have often focused entirely on the negative aspects of early childbearing. These programs might be more successful if public policy permitted them to focus on the advantages and safety of contraception, as well. Our data suggest that positive attitudes toward preventive interventions could have a measurable impact on the effects of pregnancy prevention campaigns.

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Dependency in Urban Black Families Following the Birth of an Adolescent's Child

Correlates of change in short-term economic dependency are explored in households of 307 urban black adolescents, approximately half of whom bring babies into the family. Correlates of increased dependency differ with dependency defined as "proportion of household members employed" as opposed to "welfare dependency." The key explanatory variable with both definitions is the adolescent's employment status. Presence of her baby significantly affects an adolescent's job dependency, but not welfare dependency once prior welfare status is controlled. Multivariate models illustrate the roles of transiency, age composition, household structure and the adolescent's father. The conclusion raises questions requiring examination in larger, more representative samples.

Although associations between early childbearing and poverty have long been confirmed, it has become increasingly clear that a simple causal relationship cannot be demonstrated. Evidence of the causal role of economic conditions is reflected in the multigenerational nature of early motherhood, in the societal and cultural characteristics of many communities in which it is a common pattern of parenting, in predisposing characteristics of individuals who are more likely to become teen mothers within those communities, and in the economic realities to which young women seem to be responding when they opt for early childbearing.

However, there is evidence that early childbearing has economic consequences as well. If childbearing limits the options available to the young mother, it may have an independent effect upon her well-being and that of the family in which the child is reared. This effect may be of importance in families which, by assisting the young mother, help protect her from long-term disadvantage. Although adolescent mothers who remain within their primary families, especially within supportive, often extended, black families, appear at less of an educational disadvantage than those who must make it on their own (Furstenberg, Brooks-Gunn, & Morgan, 1987; Scheirer, 1983), the consequences to the households which provide that support are not well understood.

While anyone's baby must have an effect upon the household in which it is raised, the degree to which an adolescent's child is responsible for a deterioration in economic well-being is not clear. Nor is it clear whether this deterioration, even if demonstrated, is attributable to costs associated with the additional child, the overall dependency ratio within the home, the household structure into which the adolescent's child was born, or limitations which child care places on the potential employment of the young mother and/or other members of her family.

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This paper utilizes a longitudinal data set based on the self-report of a small, demographically homogeneous group of black, urban adolescents to investigate some of these relationships. Just under half of these young women bore a child during a 2-year follow-up. We explore the structure and composition of their households at baseline, before any of them had children, and changes in those households in the subsequent 24 months. We attempt to assess the contributions of baseline and change variables, including a potential birth, to changes in the economic conditions of the homes of the mothers and nonmothers alike.

Prior Research

A high risk of dependency in the early period post-childbearing for most teen mothers has been demonstrated. The resulting financial burden is borne by the families of these young women and by society at large (Burt & Levy, 1987); costs for welfare and welfare related services to this subgroup doubled in the 1970s (Burt, 1986). A disproportionate number of welfare recipients bore their first children during their teen years; over twice as high a proportion of Aid to Families with Dependent Children recipients as nonrecipients fall into that early childbearing subgroup (Moore, 1978; Moore & Burt, 1982). Risks of living in poverty in the long and the short term appear greater for those with early births (Hofferth, 1987). However, most effects of early birth on poverty are indirect, having their impact through larger families, marital dissolution, and lower levels of schooling, all of which are associated with early childbearing (Hofferth & Moore, 1979). Of these, only lower levels of schooling could be expected to affect the adolescent mother's household in the year or two following her first birth.

Child care constrains employment for women of any age, but the ability of a teenaged mother to enter the work force is further limited because (a) her low educational status does not give her access to jobs which can pay for child care even if she prefers to work; (b) the jobs available to her rarely include the benefits she requires for herself and especially for her child, making it necessary for her to qualify for welfare (hence also medical) assistance; and (c) little child care is available outside the extended family in the low income environments in which she is often isolated. A high "tax" on welfare dollars (that is, the welfare dollars lost when working and the low benefits associated with working) makes employment an unattractive alternative to social services support (Danziger, Haveman, & Plotnick, 1981; McLanahan & Garfinkel, 1989).

Recent studies of the impact of adolescent childbearing on future economic well-being have shown that its effects may depend upon how long after the birth of the child the measurements are made. Short-term effects on welfare and welfare related dependency, and on participation of the young mother in the labor force, may be great, but some differences between early and later childbearers tend to diminish over time (Card & Wise, 1978; Furstenberg et al., 1987). Short-term reliance on social services may not be associated with long-term disadvantage, especially if those who bear children early not only enter but also leave welfare earlier than those who bear children later (Block & Dubin, 1981). In fact, an adolescent's reliance on welfare in the period after childbirth may permit her to become more independent in the future; if her period of dependency allows her to return to school she can increase her potential earnings in later life.

It has been shown that the dynamics of the household and the dynamics of poverty are related. For a family, the beginning of a spell of poverty is often associated with a change in household structure; such a change has been shown to precipitate almost 60% of the onset of poverty for female-headed homes (Bane & Ellwood, 1983). The effects of extended family structure, with and without a male spouse, on women's employment have also been explored; there is evidence that, whereas the presence of dependent adults who are not part of the nuclear family decreases the propensity of married black women to work outside the home, it serves to increase the probability that single mothers will be so employed (Tienda & Glass, 1985).

Studies which focus on the economic status of adolescents, and those which report measurable overall effects of specific structural variables on dependency, are often based on national data. The present study, using a small local sample, turns a microscope on relationships between some of the variables earlier studies have found significant—that is, nuclear/extended structure, single mother/father and mother-headed households, proportions of the household employed, and dependency ratios in the household—to explore the dynamics of adolescents' households immediately following the birth of the teenager's child. This is the period when indirect long-term effects should not yet be apparent, but increased dependency has been documented. Therefore, although the independent variables we incorporate in our models are drawn from the broader literature, the rationale for their selection here demands that they can, logically, effect the household in the short term.

Our objective here is to explore changes in economic dependency over a 2-year period within the households of 307 young women who presented for pregnancy tests at ages of 17 and younger and, specifically, to determine what role, if any, the child of an adolescent plays in bringing about such changes. First, we describe the households of those who do and do not bear children, focusing on changes in structure, age distribution, and dependency during the period. Then we seek through multiple regression to determine the contribution of several characteristics suggested by the literature—including the adolescent's child—to changes in economic dependency.

While the size and homogeneity of our sample preclude generalization, our focus on a group homogeneous in its high risk of early childbearing will permit us to develop hypotheses about sources of short-term dependency which may be tested in more broadly representative populations.

Data and Methods

This study examines the households of 307 urban, black adolescents aged 17 or younger who presented for pregnancy tests at either of two clinics in Baltimore in 1985 and 1986, all of whom were without children upon admission to the study. Interviewed at length upon admission, before results of their pregnancy tests were known, they were followed at 6-month intervals for 2 years; at 6 and 18 months they were interviewed by telephone, at 1 and 2 years in person. Although this analysis uses information from the intervening surveys, it is primarily based on information given us by the respondents at baseline and the 2-year follow-up.

During the 2-year interval, some had a baby as a result of a pregnancy diagnosed at the index pregnancy test and some bore a child as a result of a pregnancy conceived thereafter. In all, 47% had at least one baby during the observation period. In 96% of these cases, or 45% of the sample, the babies live with their mothers, the vast majority of whom continue to reside with their primary families. For purposes of comparison with those without a birth, it is the 45% of respondents whose children live in their homes who form the "Baby" subgroup. Omitted from this category are the 6 mothers whose babies do not live with them.

Comparing the households with (n = 137) and without (n = 170) these children, we explore their structure at baseline, the changes which occur in the composition and structure of the households in the 24-month observation period, and the effects of those changes on employment and welfare dependency. We use two measures of dependency as outcome variables: dependency on social services and a ratio of the number of dependent (i.e., unemployed) household members to all who live in the home. The respondent's child can change the latter measure both by adding to the number of dependent household members and by limiting the respondent's ability to enter the labor force at age 18. By isolating the independent contribution of the teenager's employment and of her child to the household's overall dependency, controlling for structural and change variables of interest, we attempt to understand the role of the baby in the period immediately following its birth.

Neither of the variables we use to define economic dependency—reliance on social service income transfers for support or the proportions of dependents to total household membership—requires that income levels be reported. Thus, we are able to rely on variables accessible to our adolescent respondents, who generally know if a welfare check is a source of income, and whether adults in the home are working or not. Given the difficulty of obtaining an adequate measure of household economic status from teenage respondents, an age group which is generally unable to report reliably on family income, our variables are a major advantage.

A limitation on our measures is the fact that we do not know the *degree* of dependency on social welfare; that is, we cannot distinguish between the household that receives one social service check and that which receives three. Similarly, we know whether or not an adult is working "regularly for pay now," but not the amount of wages earned; we do not know if the job is temporary or permanent, or whether the income is fixed or variable.

We assume that in households whose socioeconomic status is low and whose environment is ur-

an and poor, no one worker alone is bringing in disproportionately high salary; this implies that igher income is related to the presence of additional workers. Thus, when the outcome is a dependency ratio based on work status, we assume hat a household whose ratio is lower is at less disdvantage.

Descriptive tables (Tables 1–4) present percentage distributions of relevant variables. In Table 5 e define the variables that are included in the ultivariate models which follow. In these odels, we use logistic regression when the dependent variable is dichotomous (Table 7). When the ependent variable is continuous (Table 6), we use rdinary least squares techniques. In all cases, we present the standardized regression coefficients (betas), allowing comparison of the relative size of he coefficients within a given regression model.

Findings

Households of the Adolescents

The vast majority of the young women (83%) live with their mothers at baseline, and most (75%) still live with her at follow-up (Table 1). In only 28% of the households in which the mother is present, or 24% of the total sample, is the father (real or step) of the respondents in residence at baseline; in fewer than 17% of households is he present at follow-up. Many more of the mother-headed than two-parent households are extended in structure (43% vs. 21%). We will see that some of the change in family structure at follow-up is due to the respondent herself moving out of the primary family setting during the observation period, but very few (9%) set up independent households. We define such a household as one in which neither the girl's nor her boyfriend's parent(s), grandparent(s), nor aunts or uncles are present, and in which either she herself, her partner, and/or a contemporary (≤ 25 years old) are identified as the head of household. Using this definition, only three girls lived independently at baseline and all of them had returned to their primary families at follow-up. Thirteen others had moved out. Therefore, most of the changes shown in Tables 1–4 reflect changes within the primary family itself. (It is noteworthy that, although more respondents with babies than without (12% vs. 8%) have moved out of the primary family at follow-up, only 4% of the young mothers did so in order to establish a home with the father of the baby.

TABLE 1. PERCENTAGE DISTRIBUTION OF RESPONDENTS' HOUSEHOLDS BY PRESENCE OF RESPONDENTS' PARENTS AND STRUCTURE OF HOUSEHOLDS AT BASELINE AND FOLLOW-UP, BY FERTILITY AT FOLLOW-UP

	All		Baby		No Baby	
	%	n	%	n	%	n
			Baseline			
Mother and father	23.1	71	21.9	30	24.1	41
Nuclear	78.9		80.0		78.0	
Extended	21.1		20.0		22.0	
Mother alone	60.3	185	63.3	87	57.6	98
Nuclear	57.3		56.3		58.2	
Extended	42.7		43.7		41.8	
Father alone	1.3	4	0.0	0	2.4	4
Nuclear	75.0		0.0		75.0	
Extended	25.0		0.0		25.0	
Parents absent	15.3	47	14.6	20	15.9	27
Grandmother present	66.0		60.0		70.4	
No grandparent(s)	27.7		40.0		18.5	
Independent household	6.4		0.0		11.1	
Total	100.0	307	100.0	137	100.0	170
			Follow-Up			
Mother and father	15.3	47	11.7	16	18.2	31
Nuclear	78.7		68.8		83.9	
Extended	21.3		31.2		16.1	
Mother alone	59.3	182	61.3	84	57.6	98
Nuclear	64.8		69.0		61.2	
Extended	35.2		31.0		38.8	
Father alone	1.3	4	0.0	0	2.4	4
Nuclear	50.0		0.0		50.0	
Extended	50.0		0.0		50.0	
Parents absent	24.1	74	27.0	37	21.8	37
Grandmother present	39.2		29.7		48.6	
No grandparent(s)	21.6		27.0		16.2	
Independent household	39.2		43.2		35.1	
Total	100.0	307	100.0	137	100.0	170

TABLE 2. PERCENTAGE DISTRIBUTION OF RESPONDENTS' HOUSEHOLDS BY NUMBER OF HOUSEHOLD, AGE DEPENDENCY RATIO, AND JOB DEPENDENCY RATIO AT BASELINE AND FOLLOW-UP, AND BY FERTILITY STATUS OF RESPONDENT AT FOLLOW-UP

	All (n = 304)	Baby (n = 134)	No Baby (n = 170)
	Baseline		
Mean number in household	4.6 (1.8)	4.8 (2.0)	4.4 (1.7)
Age dependency ratio[a]	.365 (.268)	.399 (.252)	.338 (.279)
Job dependency ratio[b]	.728 (.221)	.755 (.211)	.706 (.225)
	Follow-Up		
Mean number in household	4.4 (1.8)	4.9 (1.6)	3.9 (1.9)
Age dependency ratio	.320 (.277)	.357 (.283)	.291 (.270)
Job dependency ratio	.640 (.275)	.753 (.191)	.550 (.298)
% change in age dependency	-12.3%	-10.5%	-14.2%
% change in job dependency	-12.1%	-0.1%	-22.1%

NOTE: Standard deviations in parentheses.
[a]Age dependency ratio equals: < 18 + > 65/All.
[b]Job dependency ratio equals: Not working/All.

Mean numbers of household residents decline overall during the 2-year interval, but not surprisingly they rise in the households in which the respondent bore a child (Table 2). We report two types of dependency ratios in this table. The first is based on age and reflects the proportion of all household members who are below 18 or over 65 years old. Age is the variable upon which dependency ratios are generally based. They reflect the theoretical dependency ratio of the household in which the respondent and her child live. Because the respondent and her child(ren) are accounted for in other variables, this variable is defined *omitting* them both from the numerator and the denominator of the ratio. The second ratio we use is an actual economic dependency ratio, describing the proportion of nonworking household members among the total number of persons in the home. The effects of the respondent and her child are retained in this variable. The first proportion declines 12%, (i.e., the proportion in dependent age groups becomes smaller) and changes in the childbearing and nonchildbearing homes are not substantially different. However, the second measure remains virtually the same in the childbearers' households while it declines over 22% in the homes in which the adolescent did not bear a child. Thus, in the homes without a birth to an adolescent, a larger proportion of household members are working at the end of the 2-year period than at the outset.

Implied by these changes but not shown here is the large amount of mobility evident within the homes of the respondents. Interviewed at 5 times in the course of 2 years, there were only 10% of homes in which there was not at least one change in residential membership in one of the intervals. Looking at only two points in time, in only 19% of the homes did the composition at the end of the 2 years appear to be the same as it was at the beginning. Even when controlling for the respondent's baby, only 17% of households had no changes in any interval during the 2-year period. Thus, in addition to changes between the beginning and the end of the period, there was considerable transiency, hence change in both age and job dependency, beyond that captured in our summary measures.

At follow-up, 55% of the respondents are 18 or more years of age (Table 3), 63% of those who bore a child. (This 7-point differential is due to the fact that those who conceived subsequent to the index event were slightly older than those who

TABLE 3. PERCENTAGE DISTRIBUTION OF RESPONDENTS BY AGE, JOB STATUS, AND FERTILITY STATUS AT FOLLOW-UP

	All (n = 306)	Baby (n = 136)	No Baby (n = 170)
≥ 18 years old	55.2	61.8	50.0
Working	37.3	26.2	48.2
Not working	62.7	73.8	51.8
< 18 years old	44.8	38.2	50.0

ild not. Mean ages of those with a baby and those without are not significantly different, 15.7 vs. 15.5.) Because we define the respondent as a dependent until age 18, we remove her from the numerator of the job dependency ratio when she reaches that age, *if* she is working 20 hours a week or more. In a variable reflecting her work status we see a dramatic difference between the two groups based on fertility status: Whereas 48% of the respondents age 18 or older without a child are working at follow-up, only 26% of those with a child are no longer dependents. This difference is significant (p = .004). Large differences in maternal status are associated with employment: Among those both working and in school, about 2 out of 10 are mothers; among those either working *or* in school, just over 4 out of 10; and among those who are neither working nor in school, almost 7 out of 10 (not shown).

At baseline, 70% of the households into which an adolescent's child will be born are receiving support from social services and/or medical assistance, compared to 56% of the families which will not (Table 4). Although that difference becomes greater at follow-up, it is frequently a pre-existing phenomenon. The difference is significant (p < .02) and is reflected in the proportion of households which are never dependent on public assistance, a proportion twice as large among nonchildbearing households as among childbearing (34% vs. 17%).

Multivariate Models of Dependency

The multivariate models which follow utilize variables quantified in the descriptive tables; the relevance of each variable is proposed by or theoretically grounded in the literature described above. All the variables are defined in Table 5. Each analysis was performed twice, using two different definitions of the number of people in the household at baseline. One method counted each individual as 1, whatever his or her age. The second used weighted equivalents that account for assumed differences in consumption following recent work by Macunovich and Easterlin (1990). However, because most of the results do not differ significantly when weighted equivalents are used, we present only the unweighted regressions below.

TABLE 4. PERCENTAGE DISTRIBUTION OF RESPONDENTS' HOUSEHOLDS BY HOUSEHOLDS' SOCIAL SERVICE SUPPORT STATUS AT BASELINE AND FOLLOW-UP, AND PERCENTAGE RECEIVING SOCIAL SERVICE SUPPORT BY RESPONDENTS' RESIDENCE WITH PRIMARY FAMILY, AND FERTILITY STATUS AT FOLLOW-UP

	All (n = 304)	Baby (n = 135)	No Baby (n = 169)
Social Services and/or Medicaid Support			
Baseline and follow-up	44.7	55.6	36.1
Baseline, not follow-up	17.1	14.1	19.5
Follow-up, not baseline	11.5	13.3	10.1
Neither baseline nor follow-up	26.7	17.0	34.3
	100.0	100.0	100.0
Receiving Social Services and/or Medical Support at Follow-Up			
All[a]	56.4	68.6	46.5
Respondent in primary family[b]	55.4	66.1	47.1
Respondent in independent household[c]	65.5	87.5	38.5

[a] n = 307.
[b] n = 278.
[c] n = 29.

TABLE 5. DEFINITIONS OF VARIABLES IN REGRESSION MODELS

Variable	Definition
Outcome	
Welfare status	0 = never on or changed from on to off; 1 = always on or changed from off to on.
Job status	Continuous variable = difference between ratio dependents in household/*all in household* at beginning and end of observation period. Dependents = all minors + adults (≥ 18) not working ≥ 20 hours a week.
Economic dependency	Continuous variable = job status variable with correction for welfare status. If change from off to on welfare, add 1, on to off add −1; if no change in welfare status add 0.
Independent	
Nuclear household	0 = extended family household at baseline; 1 = nuclear family household at baseline, includes parent(s) and child(ren) only.
Father present	0 = father not in home at baseline; 1 = father in home at baseline.
Number—baseline	Continuous variable = number of *persons* in household at baseline.
Welfare—baseline	0 = household not receiving welfare support at baseline; 1 = household receiving welfare support at baseline.
Age dependency	Continuous variable = difference between ratio *persons under 18 and over 65/all* at beginning and end of observation period, omitting respondent and her child.
Father moved	−1 = father was in home at baseline, was not at follow-up; 0 = father was in the home or out of the home at both time periods; +1 = father was not in home at baseline, was in home at follow-up.
Respondent job	0 = respondent not working at follow-up; 1 = respondent ≥ 18 and working > 20 hours/week at follow-up.
Baby at home	0 = respondent has not had a child of her own in household; 1 = respondent has a child of her own in household.
Respondent age	0 = respondent was ≤ 17 at 2-year follow-up; 1 = respondent was ≥ 18 by 2-year follow-up.
Independent household	−1 = respondent in independent household at baseline, with primary family by 2-year follow-up; 0 = respondent with primary family at baseline and follow-up; +1 = respondent with primary family at baseline, in independent household at follow-up. Independent household defined as: Respondent reports herself/boyfriend/contemporary under 25 as head of household; no parents/grandparents/aunts or uncles present.

In order to separate the effects of the baseline and change variables on both the employment and the welfare components of dependency, the regressions presented in Tables 6 and 7 use different definitions of dependency as the outcome variable. We define dependency in Table 6 in terms of change in the "job dependency" measure reported in Table 2; in Table 7, we define it in terms of the household's receipt (or nonreceipt) of public assistance at the 2-year follow-up. Note that the focus is not on absolute levels of dependency but rather on the correlates of *change* in both outcome measures.

When change in the job dependency ratio is the outcome of interest (Table 6), the employment status of the respondent herself, and the presence or absence of a child born by her, are highly significant. Also highly significant are changes in the age dependency ratio (net of the respondent and her baby) between baseline and follow-up. In Model I, which explains almost 47% of the variance in dependency, neither welfare status at baseline nor variables associated with the respondent's father are included. In Model II, variables relating to the adolescent's father are entered; his presence in the home at baseline appears to play no role, but his leaving the home during the observation period adds significantly to an increase in dependency. In Model III, baseline welfare status is entered. Although statistically significant, it adds little to the explanatory power of the models, (R^2 = .49 vs. .50).

A change in the age dependency ratio adds considerably more than welfare status (beta = .35 vs. .12). This is noteworthy because the respondent's age, the presence of her baby, and/or the presence of her father are all controlled. This independent effect of change in the age dependency ratio is largely due to the aging of household members, especially of siblings who become 18 or more during the follow-up period. It also reflects

TABLE 6. BETA COEFFICIENTS AND SIGNIFICANCE OF INDEPENDENT VARIABLES

Variables	Model I	Model II	Model III
Baseline			
Number in household	.0716	.0433	.0774
Nuclear household	.0571	.0327	.0217
Father at home		.0409	-.0033
Welfare at baseline			-.1181**
Follow-Up			
Respondent ≥ 18 at follow-up	.0647	.0511	.0514
Increased age dependency	.3707***	.3439***	.3481***
Adolescent's baby in home	.2036***	.2032***	.2103***
Respondent working	-.4633***	-.4717***	-.4898***
Independent household	-.0779	-.1032*	-.0941*
Father moved		-.1061*	-.1175*
R^2	.4697	.4854	.4966

Note: Outcome variable is change in job dependency (positive change = greater dependency).
*$p \leq .05$. **$p \leq .01$. ***$p = .0000$.

the movements of *other* individuals into and out of the home. Such movement affects the proportion of the household members who are, in fact, dependents, but these changes represent only a small proportion of the observed change in the age dependency ratio.

A somewhat different picture emerges in the models in which change in welfare dependency is the outcome measure. In the dichotomous outcome in these logit models (Table 7), status at follow-up is coded 1 to represent either continuation on welfare *or* a move from off welfare to on (thus, effectively, welfare status at 2 years determines the outcome measure). Once again, the respondents' work status is highly significant ($p = .000$). Whether or not the respondent has a job is a much more important determinant of her household's welfare status at the end of observation than the presence or absence of a child born to her. In fact, once baseline welfare status is entered (Model III), the presence of her child loses even the limited significance it had in Models I and II. In Model III, the respondent's job plays a stronger role than baseline welfare status, (beta = -2.02 vs. 1.71). In these models, the presence or absence of the adolescent's father at baseline, and his movement in or out during follow-up, become significant contributors to increased dependency. That is, his absence plays a role in the household's dependency when it is defined in terms of social service support, a role which was much weaker when it was defined in terms of the proportion of its members in the work force. Conversely, changes in the age dependency ratio, net of the respondent and her child, do not play a significant role when welfare status is the outcome measure;

TABLE 7. BETA COEFFICIENTS AND SIGNIFICANCE OF INDEPENDENT VARIABLES

Variables	Model I	Model II	Model III
Baseline			
Number in household	.1379	.1962*	.0838
Nuclear household	.2346	.5435	.6291*
Father at home		-1.5862***	-1.1109**
Welfare at baseline			1.7142***
Follow-Up			
Respondent ≥ 18 at follow-up	.7916**	.7786**	.8496**
Increased age dependency	.0007	.0007	.0007
Adolescent's baby in home	.6698**	.5648*	.3162
Respondent working	-2.0449***	-2.0416***	-2.0162***
Independent household	.5433	.5646	.4671
Father moved		-1.0585*	-.9480*
R^2	.320	.363	.446

Note: Outcome variable is social services dependency at follow-up (welfare at follow-up = 1).
*$p \leq .05$. **$p \leq .01$. ***$p = .0000$.

they are strong determinants of dependency when dependency is defined, as in Table 6, by the proportion employed in the household.

Finally, we note the significance in this model of nuclear household structure: it contributes, although not greatly, to the level of dependency. In this sample, the majority of the households, extended and nuclear, are headed by single mothers. For them, the presence of an extended family appears to protect somewhat against reliance on public assistance, once the presence or absence of their partners and baseline welfare status are controlled (Table 7). However, the beta is small, and a similar picture does not appear when job dependency is the outcome measure.

Thus, the correlates of dependency appear to differ when different definitions of dependency are employed. To explore the effects of a more inclusive definition, we performed similar analyses using a summary measure of change in economic dependency as the outcome variable (not shown). This outcome measure combines changes in the welfare status of the household, *and* changes in the proportion of household members who are in the work force. An increase in dependency over the 2-year observation period is represented by a move onto welfare and/or an increase in the ratio of dependents (of any age) to working adults. The models using this outcome give a mixed picture of the sources of dependency, suggesting the importance of differentiating between dependency measures as we did in Tables 6 and 7.

In all the models with the summary outcome measure, the *addition* of the adolescent's baby to the household, the employment status of the respondent herself, an increase in the age dependency ratio, and a nuclear household at baseline are all significantly associated with increases in dependency. When the presence of the father in the household at baseline and a change in his presence between baseline and follow-up are entered, they produce little change in the results. With welfare status at baseline added, the explanatory power of the model more than doubles. Nuclear household structure remains positively associated with increased dependency but, again, its contribution is small. The adolescent's baby remains highly significant in this model with a combined outcome, most likely because of its role in the household's job dependency ratio.

Role of Background Characteristics

In each of these models, the effects of individual background characteristics of the respondent herself were tested, characteristics such as her school status and her educational aspirations, her age or her religiosity. There were, not surprisingly, some differences between the young women who had a baby during the observation period and those who did not. Significant differences were those which suggest lower academic standing among the childbearing group, such as the larger percentage behind age for grade ($p = .01$) and the smaller percentage who aspire to more than a high school education ($p = .001$). In no case, however, were these characteristics significant in relation to the outcome variables. Furthermore, when introduced into the multivariate models, they did not change the relative contribution of the independent variables reported above.

CONCLUSIONS

We have attempted to describe changes in dependency status in the households of urban, black adolescents during a 2-year period following their presentation for pregnancy tests at age 17 or younger. Some of them had a child during that interval and some did not. We seek to understand the role of the adolescent's child in the changes in economic dependency we observe. Although limited in our ability to control for the time since the birth of the child, in all cases the effects we describe should be seen as short term; they are all observed within 18 months of the birth.

Sources of Dependency

The data suggest that the sources of increased economic dependency are not the same when dependency is defined in terms of public assistance as when it is defined in terms of an employment-based dependency ratio. Some variables are significant in relation to both outcomes, but others are clearly different. In both cases, dependency is associated with the prior status of the household and with changes in the households during the observation period. In both cases, it is related in part to the presence of the adolescent's child and in part to other factors.

The respondent's own employment status consistently makes the largest contribution to both

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II. What Did It Cost?

By Laurie Schwab Zabin, Marilyn B. Hirsch, Edward A. Smith, Morna Smith, Mark R. Emerson, Theodore M. King, Rosalie Streett and Janet B. Hardy

Summary

An experimental pregnancy prevention program for junior and senior high school students consisted of classroom lectures, informal discussion groups and individual counseling in the schools and group education, individual counseling and reproductive health care in a nearby clinic. The structure of the program allowed for extensive individual counseling for students who desired it, and the reported costs are thus considered generous. School-based services utilized 40 percent of a total three-year budget of $409,250, and clinic services, 60 percent. The average cost per student served was $122, with the average per female student almost four times that per male and the average per senior high student more than twice that per junior high student. Students who utilized more expensive types of services, such as individual counseling and medical services in the clinic, also used other program offerings more frequently. Services to students who attended only class lectures cost an average of $13.20 to deliver, while students who utilized all services cost the program an average of $546 each.

Introduction

The variety of programs or components of programs that attempt to address some aspect of adolescent pregnancy has resulted in a wide range of cost estimates both for entire programs and per patient. The diversity in organization, types of services offered and primary goals, however, makes cost comparisons difficult, as does the diversity in methodology and sources of data from which the estimates are made. One report estimates the United States' total expenditures for family planning clinic services to be $81 per woman of reproductive age, including those who do not use clinic services.[1] Based on statewide expenditures, an Illinois report estimates a cost of $10 per teenager for family life education and $75 per teenager for family planning.[2] One analysis cites $100 per patient for comprehensive school health services.[3] Another widely quoted figure of $125 per student is an average that was computed by dividing wide-ranging estimates of costs in 15 comprehensive school health clinics by estimates of the numbers of students using each facility; a number of costs, such as those for maintenance and overhead, were not included in the analysis.[4] None of the programs mentioned has published a detailed description of services, and none is proposed as a basis for replication. Project-specific estimates have been made for programs for pregnant and parenting teenagers, but not for programs that aim at prevention.[5]

This article explores the costs of one program, described in the preceding article, that had as its primary objective the prevention of pregnancy in a high-risk population. Two comments should be made at the outset. First, the project was conceived as an experimental model with a strong research component. Although research costs are not included in our analysis, the very structure of the program was luxurious, with generous staffing and ample time to meet the demands of the students. There is reason to suppose, therefore, that the reported costs are maximal. Second, the project was connected to a major health institution and shared staff with that institution. In replicating any one project, especially one with these advantages, the question must always be raised of whether the costs can be duplicated. Adjustments made in accommodating program costs to the accounting and staffing requirements of The Johns Hopkins University (the affiliated institution) are reported, and the overall impact of the institutional association is addressed.

The denominator used throughout this analysis to calculate per student costs is not total enrollment but rather students who had contact with the program; as described in the preceding article, this probably includes all students in school on a regular basis. Data on student utilization of various program components were drawn from project records, as detailed in the preceding article. The Johns Hopkins University accounting records provided a systematic and complete account of the expenditures of funds assigned to the program, which was underwritten by a private grant. Records kept by program staff and interviews with them were utilized only to help in assigning time estimates to particular functions.

The administrative staff included the principal investigator of the service project, a program director who managed day-to-day operations and a secretary who also served as the clinic registrar. The core service staff consisted of two social workers, both with master's degrees, and two registered nurses (a nurse-midwife and a pediatric nurse practitioner). They were supported in the clinic by one nurse's aide or licensed practical nurse and were joined

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on some afternoons by a physician, often the medical director, who had the ultimate responsibility for the program's medical services. Physician time was scheduled differently as the program developed: At first, a physician was utilized for one afternoon a week, then later, for portions of afternoons or on an on-call basis. On busy clinic afternoons, the staff was augmented by an educator with training and experience in sex education, adolescent services and group process. Peer resource students, trained to encourage student participation and to assist with audiovisuals and small group discussions, were paid for their help. During the first year, parents were occasionally involved and paid to serve on an advisory committee. An outreach worker compensated by another program played a small role in the first year as well.

Maintenance and custodial staff employed by the university were paid out of program funds for time spent in the clinic. The university did not charge the program directly for rent and utilities (except for telephone expenses); these were covered through an annual overhead charge of 15 percent of project funds that the university collects from all grants. This charge included bookkeeping and payroll functions. The 15 percent rate is almost identical to the actual per-square-foot charge attributable to the space occupied. At the funder's request, the university waived the charge in the first year of the three-year program, but for the purposes of this analysis, we have added a similar amount to first-year costs to represent rent and utilities. As is customary in most schools around the country, no rent was charged for the in-school health suites used by the program.

Because all indirect costs were thus applied to space, there was no item in the program budget for administrative functions supplied by the University, many of which were attributable to the record-keeping requirements of a large institution. Fringe benefits and personnel practices of the affiliated university and hospital also put a larger burden on the budget than might be expected in freestanding programs. It may be that administrative monies saved and monies spent (or time saved and time spent) because of this program's relationship with a major university hospital cancelled one another out; it would be difficult to prove that the relationship systematically increased or decreased administrative costs. Some budget adjustments were made when staff and materials were shared, but often time devoted to this project by hospital staff balanced time devoted by program staff to other tasks in the hospital; similarly, materials purchased with program funds were shared with the hospital, and hospital materials were shared with the program. Finally, because an extant facility was used, as is often the case with programs run in cooperation with another institution, start-up costs did not include furniture or clinic equipment, such as examining tables.

The two social workers and two nurses maintained daily logs of all their student contacts. These enabled us to estimate the average time invested in each type of program encounter. Although other staff did interact with students at times, the four key staff members were primarily responsible for the six school and clinic services offered by the program. Therefore, we have allocated the costs for the entire project to the six component services according to the amount of time the four workers invested in each component. This method of calculation allows for a breakdown of costs by site (school and clinic). The analysis produces maximal estimates of the costs of each service, because all expenditures for the program—including administration, rent, supplies and support staff—are assigned to one or another of the services provided. When divided by the number of student contacts within that service, the cost of a medical visit, for example, will include expenditures for the physician, nurse's aide or licensed practical nurse assisting in the clinic; contraceptives and other medical supplies; a share of overhead for administration and maintenance; and the portion of the nurse's time allocated to clinic visits as reflected in her staff log. Similarly, the cost of individual social work visits include expenditures for educational materials, an extra educator in attendance during clinic hours, overhead and the social worker's time.

The distribution of staff time differed in start-up and later segments of the program and in the summer and winter segments. Consequently, costs were computed as a percentage of the time devoted to each type of service in different time periods covering the course of the program. These costs were then averaged to determine an overall cost per service.

A few costs are divided between the school and clinic sites before being allocated according to the time distribution index. The costs for administrative staff are divided 50 percent to each site, with the exception of those for the secretary, who also acted as clinic registrar—her time is divided 25 and 75 percent between school and clinic services, respectively.

Table 1. Program costs, by type of expenditure, according to site, September 1981–June 1984

Type of expenditure	Total	School	Clinic
Total	$409,250	$163,500	$245,750
Personnel	329,000	143,500	185,500
Administrative	117,500	49,500	68,000
Social workers & educators	93,750	50,250	43,500
Medical staff	105,750	41,500	64,250
Students & parents	3,250	0	3,250
Maintenance	8,750	2,250	6,500
Rent & utilities	43,250	10,750	32,500
Supplies	35,250	8,750	26,500
Office	7,250	1,750	5,500
Educational	14,000	7,000	7,000
Medical	14,000	0	14,000
Travel	1,750	500	1,250

Similarly, because the clinic served as the administrative center for both sites, 25 percent of office supplies, rent and maintenance costs at the clinic are attributed to the school component of the program. Within the clinic or school component, costs not specific to one or another site are prorated according to the time distribution of the social workers and nurses.

Budget Breakdowns

Table 1 shows a total budget of approximately $409,250 for the three school years.* School-based services utilized 40 percent of the budget, and clinic services, 60 percent. Personnel costs for administration include a small portion of the time of the principal investigator for the service program, all of the time for the program director in the first two years and half of her time in the third year, and all of the time for the secretary/registrar in all three years. With the reduced activity of the program during school vacations, the assignment of social workers and nurses to the hospital helped control costs while allowing for continuity of staff. The fourth line of the table shows the costs for the time of the two social workers (whose average annual full-time salaries would have been the equivalent of $20,000, including fringe benefits) and the hourly cost of educators during busy clinic afternoons. The medical staff category accounts for the costs of the two nurses (with an average full-time equivalent salary of $24,000, including benefits) and an hourly cost for the part-time physician and nursing assistants.

*The program ran from September 1981 to June 1984. Staff work started between September and November 1981; the school services commenced in November, and the clinic opened in January 1982.

Table 2. Number of students served, total expenditures and costs per student, by gender and school level

Gender and school level	N	Total	Costs per student		
			Average	Maximum†	Minimum
All students	3,349*	$408,140	$122	$3,052	$3
Junior high	1,834	143,108	78	1,680	3
Senior high	1,508	256,001	170	3,052	3
Male	1,400‡	66,438	48	891	3
Junior high	930	47,460	51	815	3
Senior high	459	20,970	45	891	3
Female	1,888‡	340,281	180	3,052	3
Junior high	872	95,397	109	1,680	3
Senior high	1,012	244,868	242	3,052	3

*Includes students with gender and/or school level unknown.
†Maximum costs exclude peer resource students. ‡Includes students with school level unknown.

Table 2 shows the allocation of expenditures by sex of student and school level; the average cost per student served is $122. The average cost per female student is almost four times that per male, and the average cost per senior high student is more than twice that per junior high student. These mean costs represent widely divergent extremes, as the maximums and minimums suggest. The $3 minimum is the cost per student of in-school discussion groups conducted by a social worker, who led most of these discussions and whose hourly rate was less than that of the nurses, who also led some discussion groups. Maximums reach extraordinarily high levels, even excluding the costs attributable to the peer resource students, which are omitted from these maximum figures and will be discussed later. The maximum of $3,052 for a senior high female covers some 228 contacts that one individual had with the program staff.

Table 3 shows the cost for each of the six types of service. It documents the relatively low cost associated with small-group work both in the schools and in the clinic—slightly more than $4 per student contact. This was less than a class presentation. Although each presentation included many more students, they took time to prepare and lasted for a full class period.

Table 3. Number of contacts and cost per contact, by site and type of service

Site and type of service	N	Cost
Total	38,434*	$11.23
School	23,570	5.42
Class presentation	9,263	5.56
Group discussion	14,604	4.44
Individual counseling	1,703	28.08
Clinic	10,756	22.78
Group education	5,377	4.22
Individual counseling	2,243	42.24
Medical visit	3,135	40.59

*Includes 109 contacts with site or type of service unknown.

Note: Total number of contacts is 3,046 greater than reported in Table 1 of the preceding article. The 109 with site or type of service unknown were not included in the analysis of services. 2,937 contacts made jointly by two staff members were counted as one contact when tabulating services but as two when tabulating costs, because each worker contributed time.

Small-group costs contrast dramatically with the high price of individual counseling, which averaged $28 in the school setting and $42 in the clinic. No attempt was made in this program to reduce the amount of time devoted to these sessions, and the costs reflect that decision. Social workers did all of the clinic counseling and 60 percent of the school counseling. Yet, even though personnel costs were less for social workers than for nurses, the average cost per clinic contact was more than that per school contact because private consultations were longer in the clinic. In fact, on a per contact basis, clinic visits with the social worker were more expensive than visits with medical staff. Since 80 percent of all clinic registrants asked for a contraceptive method at their first visit and since counseling was required for all contraceptive patients, these counseling costs are part of the process of introducing and maintaining a contraceptive regimen.

Most of the encounters of students with the staff in the first year of the program cost more than in the last two school years, because of start-up costs and because of the time it takes for patient flow to build. With time and improved efficiency, medical service costs were reduced, so that individual medical visits reported in Table 3 at almost $41 for each encounter averaged slightly more than $31 at peak periods. Clearly, the expenditures reported in any study of costs will be affected by the duration of the program, because start-up costs are attenuated over time.

Table 4 classifies all of the students touched by the program by the pattern by which they utilized services. Moving across the table, groups include those who heard only a classroom presentation, used only school components, visited the clinic but never sought individual services, sought individual counseling with the social worker, had a medical visit, and had visits with both the social worker and medical personnel. As expected, mean costs per student varied widely depending on how many different components they utilized, and moving from left to right, increasing levels of involvement imply sharply increasing costs. For example, those students who attended only class presentations attended an average of 2.4 such sessions during their program exposure, at a cost of $13.20 to the program. Those students who participated in other school activities without attending the clinic averaged 7.2 contacts with the program—2.7 class presentations, 4.3 group discussions and 0.2 counseling sessions—for a total of $40 worth of services.

This table suggests that not only does use of more expensive components increase costs, but those students who register for individual clinic services use more of each component along the way. For example, the average number of clinic group contacts for students whose only clinic participation was in group education (1.4) was lower than that for those who had individual counseling (2.6), and was much lower than that for those who utilized both counseling and medical services (8.2). Note that even the row reflecting attendance at class presentations increases with greater program involvement, implying that these students spent more time in school, or at least attended these classes more often. Thus, the students who utilized the more expensive services used more of the other services as well. For example, costs for school services alone for those students who visited the clinic for both individual counseling and medical services totaled $140, in comparison to the $40 total for the same services for those who restricted their contacts to the school setting.

The clinic data indicate that the small subset of students (40) who utilized medical services but never met with the social worker had lower overall costs ($119) than those who received counseling but no medical services ($162). The first group were primarily individuals who came for one medical visit. They contrast strikingly with students visiting for medical services who also consulted a social worker, a group with almost six medical visits each,

costing an average of $235 for medical treatment alone. What is noteworthy about this latter group, however, is the fact that their total cost to the program of more than $545 each is not solely a function of their medical costs but reflects their more extensive use of almost all services.

A breakdown by sex shows the same pattern among females: The more types of service the student participated in, the more she used each service. Among males, the pattern is not quite as consistent. A particular exception is a small group of 63 who used the clinic only for group activities. Because these students also attended the smallest mean number of class presentations, many may not have been members of the student body at all. Some may have showed up at the clinic with partners or friends, since 20 of them appeared on clinic sign-in sheets but did not appear on any of the school rolls. While they were technically not eligible for service, out-of-school partners might be reached in this manner at little cost, a possibility that other programs might wish to explore.

Table 5 (see page 192) divides the services offered and their cost per student into three broad categories—education, counseling and the provision of contraceptives—ignoring the site at which students received these services. Students in the first group received classroom or group education—in the school, the clinic or both—but no private consultations. Those in the second group received individual counseling at at least one site. Those in the third group were registered clinic patients who received some contraceptive method from social workers, medical staff or both. The overall cost per contraceptive patient, of whom there were 740 in the program, averaged $432. Although not evident in the table, this cost was considerably less for the 241 males ($174) than for the 449 females ($557). All the figures shown in the table include the large costs associated with training and serving the 12 peer resource students. The cost for each of the 12, all of whom were contraceptive patients, averaged $2,248, plus direct stipends paid when they assisted at the clinic. Excluding the expenditures for these students would decrease the cost per contraceptive patient to $402 and the total cost per student to $115.

Costs were also calculated according to whether students attended a program school for one, two or three years. Costs rose steeply, especially between one and two years' exposure. The sharp rise is attributable not only to the greater number of services used in a longer time period but also to the much larger proportion of those students exposed for two or three years who utilized the clinic for contraceptive services. This implies return visits for those who continued to use contraceptives. Longer exposure also implies older ages, but some of the differential remains even when the age is controlled for.

Table 4. Mean number and mean cost of contacts per student, by type of service, according to pattern of utilization

Type of service	Utilization pattern					
	Class presentation only	School contact only	Clinic group education	Clinic counseling; no medical	Medical; no clinic counseling	Individual counseling & medical
TOTAL	(N=1,018)	(N=1,279)	(N=234)	(N=246)	(N=40)	(N=532)
Contacts	2.4	7.2	7.8	15.6	11.0	35.0
Cost	$13.20	39.74	42.44	162.11	119.21	545.66
SCHOOL						
Class presentation						
Contacts	2.4	2.7	2.5	3.6	2.8	3.5
Cost	$13.20	14.66	13.91	20.01	18.99	19.73
Group discussion						
Contacts	na	4.3	3.8	6.6	4.2	12.0
Cost	na	19.55	15.07	28.39	17.71	53.74
Indiv. counseling						
Contacts	na	0.2	0.3	0.4	0.6	2.4
Cost	na	5.53	7.70	11.47	17.88	66.90
CLINIC						
Group education						
Contacts	na	na	1.4	2.6	1.9	8.2
Cost	na	na	6.75	11.06	7.91	34.41
Indiv. counseling						
Contacts	na	na	na	2.2	na	3.2
Cost	na	na	na	91.17	na	135.93
Medical visit						
Contacts	na	na	na	na	1.5	5.6
Cost	na	na	na	na	60.02	235.27

Discussion

In a sense, the attribution of a cost to each service is an artifact of the analysis. The staff had a fixed cost; each student did not add an incremental cost but rather used a piece of the time that would have been paid for whether or not a service was delivered. Could that staff have been smaller? In the interest of continuity between the school and the clinic, the model called for the placement of a staff person in the school in the morning and the same staff person in the clinic in the afternoon. Without violating the model, no savings could be effected there; however, considerable savings were realized after the first year, by putting only the social workers (and not the nurses) in the schools on a daily basis. In the second and third years, the nurses went into the schools only for special lectures or activities. This saving was effected because data from the aggregate research survey conducted at the end of the first year revealed that students who went to the health suites had discussed the same subjects with either professional. They did not appear to require a medical person. The ability to retain higher cost medical personnel for only the half-time clinical operation represented an important economy.

One of the big surprises in these data was the evidence that social work counseling in the clinic was more costly, per contact, than medical care. This is clearly a function of the time invested in each encounter, time which was allowed in this service model. Consequently, even with the price of contraceptives, other medical supplies, physicians and support staff included in the estimated cost of visits with the nurses, the time invested in clinic counseling by social workers made their sessions more costly. The belief of everyone associated with the program is that the program's effects would be difficult to replicate without the social work component. Furthermore, if more counseling were to fall on the medical staff, with their higher hourly costs, these services would become prohibitively expensive.

Does that imply that it is necessary to invest in virtually unlimited personal counseling for any student who requests it? Should those in need of repeated sup-

Table 5. Number of students and cost per student, by services used, according to years in program

Services used	All		One year		Two years		Three years	
	N	Cost	N	Cost	N	Cost	N	Cost
Total	3,349	$122	1,708	$ 39	1,014	$174	629	$264
Classroom and group ed. only	2,325	23	1,402	14	603	26	320	50
Individual counseling	284	126	106	87	102	127	74	183
Contraceptive services	740	432	196	188	309	473	235	581

portive care be referred instead to outside agencies? The staff believes it would have been difficult to convince the students who depended most heavily on them to accept an outside referral, because when the attempt was made in several cases, it was difficult to convince the student to follow through. It is also the sense of the staff that those who made the largest demands on their time were not always their greatest successes, but often were their most needy cases. If as a result of extensive counseling, a student's tenure in school can be extended one year or an unintended pregnancy can be postponed by a few months, then reducing the counseling component might be a serious mistake. In the absence of a control clinic in which counseling time is limited, these questions cannot really be answered. What is not in doubt, however, is that in a disadvantaged urban population where few resources are available to teenagers, life-event counseling and crisis management are major unmet needs.

Group education in the clinic was an extremely economical way of performing several functions: For unregistered students, it introduced the ideas and attitudes of the program, and for some, it served as the precursor to registration; for other students, it was an on-going source of educational support in the absence of individual clinic services; and for registered patients, it augmented more costly individual services and updated their education on repeat visits. Small-group work in the school, at comparable costs, accomplished many of the same goals for the same students, and for many who would not otherwise have received this service.

A subjective assessment by the staff was that the program probably invested too little time in establishing positive relationships with the faculty of the program schools. If more time had been spent on this endeavor, teachers might have involved the staff in more classroom discussions, the social workers' time in the school would have been more efficiently used, and the cost of classroom contacts would have been considerably less than the cost of small-group sessions, not more.

The use of staff time by the peer resource students cost almost $27,000, averaging $2,248 for each member. That is a major investment and was supplemented by direct stipends paid to them totaling more than $2,000. It was the impression of the staff that the payoff came more in the individual growth it encouraged for these students than in the original goals of referring other students to the clinic or providing assistance to the staff. All 12 students were contraceptive patients, so some of the expenditure would have been incurred even if they were not peer resource students. If one subtracts, from the approximately $29,000 that these individuals cost, the average expenditure on three male and nine female contraceptive patients, the remainder is almost $23,500, or $11,750 per year. This is a relatively high price to have paid for the help of the peer resource students, although it also paid for their contribution to the students' sense of ownership and pride in the program. There are probably less costly ways of promoting that sense of student participation. A decision on whether or not to include a similar component should probably be made with the knowledge that the drain on staff time, and hence on program dollars, is considerable.

Costs for individual medical services do not appear high in view of their inclusion of tests and contraceptive supplies, especially since after the start-up period, they came down to $31 per contact. Critically important to an estimate of medical costs in a new program are data on the percentage of students who are sexually active, because of the large impact of their demand for contraceptive services, and in particular, the costs of their initial visits.

The association of a school-linked program with a larger, year-round institution can be cost-efficient. The ability to share staff so that they can be used only where and when needed would serve as an economy to any program, especially one with the time and seasonal constraints of a school-linked operation. Cooperation between schools and nearby health delivery systems also permits the provision of year-round health care in one site. This model, which places the clinic adjacent to, but outside, the school is politically attractive. It is also cost-effective because, in many locations, it allows one clinic to serve more than one school. However, it requires more than an informal linkage; it requires the presence of program staff in the school.

Forty percent of the cost of this model program was used for school services and 60 percent was used for clinic services, even though many more students used the school components than used the clinic components. The $163,500 that the school services cost—or between $50,000 and $60,000 per academic year—seems a relatively small amount to have spent to reach almost all the students in the classroom, among them 1,018 who were reached only in that setting. It also covered the delivery of small-group and individual services to the 1,279 students who sought them out only in the school setting and to the 1,052 students who received services in the clinic setting. Much of the program's success in postponing the onset of intercourse[4] must have been due to the school component, since it was usually the sexually active students who came to the clinic. The program's success in bringing about measurable change in the student body as a whole appears to have been predicated on establishing an atmosphere of communication and responsibility among a larger segment of the students than attended the clinic, which again reflects the value of the school component. This study suggests that the cost of that component is relatively low, which may recommend the model for replication in other jurisdictions.

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The Baltimore Pregnancy Prevention Program for Urban Teenagers

I. How Did It Work?

By Laurie Schwab Zabin, Marilyn B. Hirsch, Rosalie Streett, Mark R. Emerson, Morna Smith, Janet B. Hardy and Theodore M. King

Summary

Two teams, each consisting of a social worker and a nurse, delivered the bulk of services in an experimental pregnancy prevention program for junior and senior high school students that combined school and clinic components. In-school components were classroom presentations, informal discussion groups and individual counseling; clinic services consisted of group education, individual counseling and reproductive health care. Eighty-five percent of the total student enrollment had contact with at least one component of the program. More males than females were among the 15 percent with no contact. When estimates of chronic absenteeism are taken into account, the program is believed to have reached all students in regular attendance.

Approximately 22 percent of staff-student contacts occurred in the classroom, and the remaining 78 percent were voluntary on the part of the student. About 68 percent of contacts occurred within the school, with small group discussions especially popular—they represented 41 percent of all contacts. The proportion of contacts that occurred in the clinic was highest among senior high females (46 percent) and lowest among senior high males (12 percent).

The mean number of staff encounters per male student is about one-half the number of females. But even senior high males, the group least likely to utilize clinic services, seek out small-group sessions in the school.

Introduction

Creative programs for the prevention of adolescent pregnancy and childbearing have proliferated in the United States in response to what is generally perceived as a high pregnancy rate among unmarried teenagers. Even though there is more to be learned about adolescent risk-taking behavior, the feeling is abroad that enough is known to begin working on pregnancy prevention measures.[1] Because few programs have been evaluated, there is little information on which to base the choice of models to replicate, and even less information with which to estimate the costs of replication.

In a previous issue of *Perspectives*, we reported on a school pregnancy prevention program that combined educational and medical intervention. The article showed the effects of the program on the attitudes, knowledge and behavior of a junior and senior high school population in Baltimore.[2] During the program's existence, pregnancy rates declined 30 percent in the program schools, while rising 58 percent in control schools; in addition, a delay was documented in the onset of coital activity among young women attending program schools. This, the first of two articles published in the current issue, provides a detailed description of the services delivered by that program and the students' overall utilization of those services; it does not explore the relationship between individual patterns of utilization and individual outcomes, but attempts to give a sense of what was done by the staff to bring about the collective results. The first article lays the groundwork for the second, which is an accounting of program expenditures and the costs of specific services.

The privately funded demonstration project known as the Self Center program ran for approximately three years, and was a cooperative venture of The Johns Hopkins University School of Medicine and the Baltimore City Departments of Education and of Health. The program served a junior and a senior high school with enrollments of approximately 700 and 1,000 students, respectively; they were located a few blocks apart in an inner city neighborhood characterized by public and low-cost housing. The program's services consisted of classroom presentations, educational and counseling services provided in health suites in each of the two schools, and educational, counseling and medical services provided in a storefront clinic. The clinic, located across the street from the senior high school, was open only to students from the two program schools. The overall project combined service and research (two other schools were used as controls in evaluating the program), and it succeeded in achieving many of its objectives:[3] to raise the level of student knowledge regarding reproductive biology and pregnancy, to postpone onset of intercourse where possible, to increase the level of clinic attendance and contraceptive use

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among the sexually active, and to reduce the risk of pregnancy.

Each of the two program schools was assigned a Self Center team, consisting of a social worker and nurse-midwife or pediatric nurse practitioner who were experienced with and had a special interest in adolescents. They were joined in the clinic by a registrar, nurse's aide or licensed practical nurse and, on some days, by a physician. An experienced educator was also present on some afternoons to help with group education; both women used in that role had master's degrees and training and experience in sex education, adolescent services and group process. Other staff, including the service program's principal investigator and the program director, were involved in the administration and supervision of the project but were not responsible for the day-to-day provision of services to students.

In addition, 12 students—three males and nine females—were recruited to serve as peer resources for one year each in the second and third years of the program. The peer resource members were trained to serve as representatives of and spokespersons for the program and to assist with such tasks as presenting visual aids. These students were identified by their T-shirts or large red buttons with the words, "Ask me about the Self Center." In addition to their specific duties, they added a sense of student ownership and participation in the program.

Prior to the initiation of the program, parents were informed of its objectives and told of the services to be provided and of the student questionnaires to be used as part of the research component. Parents were invited to consult with the service staff and, in the first year, a few were paid for their participation in a parents' advisory committee. However, parental approval is not required in Maryland for students to obtain reproductive health services.

Program Components

This article focuses on the day-to-day work of the two social workers and the two nurses assigned to the schools; the vast majority of the students' individual and group contacts with the program involved these workers. The services that these teams provided fall within six categories: three types of services rendered in the schools (classroom presentations, small group discussions and individual counseling) and three in the clinic (group education, individual counseling and medical services).

* *Classroom presentations.* Especially in the first year, the initial contact between students and staff of the Self Center program was often in the classroom; each semester the social worker (and sometimes the nurse) gave at least one full-period presentation to every homeroom class in her school. The presentations were more structured and didactic than the smaller group sessions, but included interaction and discussion related to values clarification, decision-making and reproductive health.

The first class presentation of each year introduced the Self Center services and began to raise the students' consciousness about the consequences of unprotected sexual activity and to support students who were not sexually active. During this first session, students also viewed "A Matter of Respect," a film featuring Jesse Jackson. The film, which focuses on adolescent pregnancy as a problem for males and females alike, was used as a catalyst for philosophical discussions that would create a bond of understanding between the staff and the students. In fact, this bonding was the primary goal of the session. The staff sought, in a spirit of open communication, to establish the students' rights to raise questions and discuss subjects of concern, including matters they had never before discussed with adults.

The second classroom discussion, taking place in the same semester or the following one, usually dealt with personal goals, sexual activity, pregnancy, decision-making, contraceptives and sexually transmitted diseases. Although two presentations per year were mandated, many students received more because the staff offered their services to teachers when a relevant subject was taught within the regular curriculum. In the 30-month school program, Self Center staff conducted approximately 350 classroom sessions.

* *Group discussions.* The social worker, and sometimes the nurse, spent about two and a half hours during the middle of each day in the school health suite; students could drop in during their lunch periods to talk, seek individual counseling or make appointments for clinic visits. Group discussions in the health suites generally occurred spontaneously, either as informal rap sessions or as focused discussions initiated by a team member who had identified a group of students with a specific problem (e.g., suspected teenage prostitution or physical immaturity that had led to teasing). In these sessions, students often raised questions about pubertal development; the social worker would pose such topics as future goals, decision-making, peer pressure, drugs, alcohol, the consequences of being a teenage parent and male-female relationships. The health suite was a hospitable environment in which to play "Transformer," an educational game that attempts to simulate a day in the life of a teenage parent, or "Humanopoly," a game that teaches anatomy and raises issues of values. Thus, small groups coalesced around a need, expressed by the students or perceived by a staff member; the discussions evolved under the guidance of professionals trained in group process. These informal sessions identified emotional needs that formal instruction could not; for some participants, the discussions led to individual counseling within the program or outside referral.

* *School counseling.* Each social worker had a well-publicized schedule and an accessible school office for individual consultation. Students could seek out the social worker to discuss relationships with the opposite sex, problems at home, a possible pregnancy and other personal matters. The social worker could encourage the student to come for weekly counseling, arrange for a clinic visit for the student, or refer him or her to another agency. If prolonged counseling was required, the clinic was often the better site because it conveyed more of a sense of privacy and neutrality, and was not subject to the academic schedule.

* *Group education.* After school, some combination of the four workers staffed the clinic, beginning at 2:30 p.m. most afternoons and continuing until 5 or 6 p.m. Students visited not only for individual appointments but also to participate in group discussions or to view videotapes and movies. The educational materials were selected to appeal to both males and females. Students visiting the clinic were required to register only if they were seeking individual counseling or reproductive health services. Appointments could be made ahead of time, but drop-ins were accommodated as quickly as possible.

Almost all youngsters who went to the clinic, with or without a specific appointment or purpose, received some form of educational intervention. Groups formed around a staff member in the informal atmosphere of the waiting room or around an audiocassette machine presenting educational material on such topics as sexually transmitted diseases, pubertal changes and talking to parents about sex. Books, pamphlets and the games described previously were also available for student use, and their ability to organize activities themselves contributed to the program's message of personal responsibility.

Table 1. Number of student contacts with program staff, by site and type of service, according to gender and school level, December 1991–June 1994

Site and type of service	All students (N=3,944)*	Female		Male	
		Jr. high (N=1,001)	Sr. high (N=1,163)	Jr. high (N=1,132)	Sr. high (N=581)
Total	33,388	9,175	16,095	6,475	2,565
School	22,833	7,911	8,858	4,448	2,254
Class presentation	7,168	2,354	1,875	2,260	683
Group discussion	13,742	4,503	5,614	2,114	1,460
Indiv. counseling	1,703	354	1,166	71	111
Clinic	10,755	1,264	7,440	1,930	311
Group education	5,377	1,007	3,600	594	186
Indiv. counseling	2,243	402	1,310	407	124
Medical visit	3,135	555	2,530	29	21

*In this table and Table 2, 67 students are included who appeared on a school list or on staff logs but whose school or gender was unknown; column also includes 78 contacts with the program by these students.

Some clinic education sessions were more organized in nature: Groups of approximately 10 were invited into a separate room to discuss topics relevant to their personal experiences, their reproductive education and their sexual behavior. Like the discussions in the school health suite, these sessions placed heavy emphasis on values clarification, personal decision-making and helping students to see their sexual behavior in the context of their own long-range plans.

• *Clinic counseling.* A student could become a registered patient at the clinic because of the need for an individual counseling session with a social worker. The initial interview with most female enrollees was socio-psychological in nature, eliciting personal information on sexual experience, family relationships and school achievement. Individual counseling sessions addressed personal and family problems, such as a family fight, prior abortion, a current pregnancy, a sexual relationship or a school failure. The program's focus on reproductive health did not preclude a broad interpretation of its counseling mission.

The social workers provided much of the health education through individual counseling. For example, an individual who had had repeated bouts with sexually transmitted diseases would receive individual counseling and information on their cause, how they spread and how they are treated. In addition, social workers dispensed foam and condoms to male registrants and at times to females, after suitable counseling on their use. Using a case-management model, the social workers collaborated closely with the nurse-midwife and nurse practitioner, often discussing in advance of a patient's visit what approach should be taken.

• *Medical visits.* Females seeking other contraceptive methods—and males with physical problems related to reproductive health—had to see the medical staff. Medical visits might be made for pregnancy tests, discussion of menstrual problems and treatment of sexually transmitted diseases, for example. Some serious conditions related to areas other than reproductive health were also diagnosed. Young women who sought contraceptive services were usually given comprehensive examinations by the nurse or gynecologist at the first medical visit. Medical staff attempted to care for a patient's physical needs, to teach the patient about his or her body and to address the emotional issues that can influence an adolescent's compliance with reproductive health care—issues affecting appointment-keeping, contraceptive continuation, early pregnancy testing and appropriate medical follow-up.

Program Utilization

The data sources for quantifying the services utilized were clinic records, staff logs and school enrollment lists. The clinic had sign-in sheets in the waiting room, and the staff completed registration forms for students seeking individual services, medical history forms for students who saw a nurse or physician, records for those who saw a social worker and a summary form for clinic visits not otherwise documented. The staff logs, maintained daily by the two nurses and two social workers, recorded all school and clinic contacts they had with students. These were the only forms completed totally for research purposes. In combination with clinic records, the logs provide an estimate of the overall time invested in each service component.

A difficult quantitative exercise in evaluating programs in a school setting is obtaining an accurate count of the students eligible for service. On the surface, it seems straightforward—include anyone enrolled in a program school at any time during the program period. However, school systems update rolls frequently, and each is a little different, accounting for transfers, dropouts and late registrants. Since we wanted to obtain a maximal count of the students eligible for services, we included everyone who was listed on any of the eight school rolls we obtained covering the program period, plus a few people not on the rolls who showed up on some log or clinic form. We will report program coverage in terms of the proportion of the maximal student population reached by various services. Many students who were chronic absentees, dropouts or short-term transfers are included in this count.* The program would have had little opportunity to reach many of these students, some of whom may never have attended school at all. We thus consider the estimates of program coverage that result to be conservative, and we will provide an alternate estimate of program coverage that takes into account the chronic absentee rate in the schools.

Table 1 categorizes all student contacts during the three academic years that the program operated.† All encounters with students entered on a log, clinic record or sign-in sheet are counted as contacts; casual encounters between staff and students are not recorded or counted. Overall, 33,388 formal contacts are included in the analysis; this figure is a minimum estimate, as some contacts may not have been recorded and a few contacts are excluded because of missing information. Sixty-eight percent of contacts took place within the school setting; slightly less than one-third of these occurred in the classroom, where contact was not elective and where large numbers of contacts occurred at once.

The marked popularity of small group encounters in the school health suite is evident in the aggregate service numbers. Forty-one percent of all student-staff interactions fall into this category. While much individual counseling was done in the

*Based on a one-year estimate, the proportion of students chronically absent was 11 percent among senior high school males and females, 27 percent among junior high school females and 38 percent among junior high school males. Readers wanting more details on the selection of school demonstrators should see L. S. Zabin and M. B. Hirsch, 1987 (reference 1).

†Because student services did not begin until December of the first year of the program, the school portion operated for 27 months, or three months short of three academic years; the clinic operated year-round, opening in January of the first year and closing, for research purposes, when the program ended in June of the third year—a total of 30 months.

school, the proportion of individual contacts in the school setting is much lower than that of group contacts. The social worker was often in the health suite alone and could only counsel individual students if a peer resource person or nurse was available to accommodate the other students. Nonetheless, the school was a good base from which to encourage attendance at the clinic, which was better geared for individual counseling and, as the numbers indicate, was more heavily used for that purpose than was the school. All counseling sessions at the school were voluntarily sought by the students, whereas in the clinic, individual counseling was required of those seeking contraceptives.

The proportion of contacts that occurred in the clinic differs by sex and school level. The schools not only represented different age-groups but also different professional staffs in different educational environments. Whereas 46 percent of contacts with senior high females were in the clinic, only 12 percent of contacts with senior high males took place in that setting; among junior high students, 21 percent of female contacts and 19 percent of male contacts occurred in the clinic. Since clinic registrants who came for individual services—they frequently had both a counseling and medical appointment in one visit—were nearly always involved in some group experience, if only in the waiting room, they are also counted within the clinic group education category. Also included are teenagers who signed in on the waiting room log without seeing a staff member individually. Many other young people accompanied friends and took part in the day's activities without signing in—they are not counted in the figures.

Senior high school females were the most frequent patients of the medical staff, contributing 61 percent of all medical visits. About 16 percent of all program contacts with older girls were medical visits, compared with six percent for the younger girls. There were more individual counseling contacts among males than there were medical contacts, since males did not need a medical examination to receive contraceptives. They could obtain condoms and foam, along with contraceptive counseling, from social workers; indeed, 82 percent of all clinic visits to a social worker by males included the provision of contraceptives (not shown).

Some students had very brief durations of exposure to the program, and therefore less opportunity to use it, than did others. Few students who graduated from the junior high school in this study attended the program's senior high school, because they had a number of other schools as options. Consequently, hardly any ninth graders who graduated from the junior high in the first year of the program and none of the 12th graders who graduated from the senior high that year could have had more than six months of exposure to the program, which was initiated in December. In fact, 37 percent of those with no program contacts were exposed to the program during only that first partial year. The mean period of program exposure for students in this study was approximately 16 months, including summer and other vacation periods. Although the clinic was open during vacations, the school components were offered only when school was in session and were available to students for an average of 250 days.

Table 2. Percentage of students using program services (and percentage after adjustment for chronic absentees), by site and type of service, according to gender and school level

Site and type of service	All students	Female		Male	
		Jr. high (N=1,001)	Sr. high (N=1,163)	Jr. high (N=1,132)	Sr. high (N=581)
	(N=3,944)				
Total	84.8 (112.2)	87.1 (119.0)	87.0 (97.9)	82.2 (132.8)	80.7 (90.7)
School					
Class presentation	72.7 (96.1)	81.2 (111.2)	73.0 (83.9)	73.9 (119.1)	61.3 (68.9)
Group discussion	50.6 (66.9)	55.2 (75.6)	55.6 (63.8)	42.0 (67.7)	48.2 (54.2)
Indiv. counseling	15.2 (20.1)	15.3 (20.9)	29.8 (34.3)	4.3 (7.0)	8.6 (9.9)
Clinic					
Group education	26.7 (35.2)	24.2 (33.1)	42.1 (48.4)	21.5 (33.9)	12.4 (13.9)
Indiv. counseling	19.7 (26.0)	14.5 (19.8)	34.3 (39.4)	15.6 (25.2)	9.8 (11.0)
Medical visit	14.5 (19.2)	13.4 (18.3)	34.8 (40.0)	1.8 (2.8)	2.2 (2.5)

Note: Chronic absentee rates as reported by the schools were: junior high females, 27 percent; senior high females, 11 percent; junior high males, 38 percent; and senior high males, 11 percent.

A calculation of the mean and median number of contacts with the program by students who had a minimum of one contact indicates a mean of 10 contacts per student and a median of four in the course of the average 16-month exposure period (not shown). The mean number of contacts ranged from 5.5 among senior high males to 16.0 among senior high females; the median was three for males at both school levels and five for both the younger and older females. The mean is considerably above the median because of a few students who had a very large number of contacts with the program. A senior high school female had the largest number of contacts (234), with 227 being the most for a junior high female, 215 for a senior high male and 115 for a junior high male. Many of the individuals with large numbers of contacts were peer resource students, who were in frequent contact with the staff for training and for their personal needs, but other students also presented repeatedly in one site or both. This quantitative evidence that a few students monopolize much of the professional staff's time is confirmed by the staff themselves, who report that these heavy users were often among their most difficult and needy cases.

With Table 2, we move from numbers of contacts to percentages of students who had contact with the program. The first set of calculations uses total school enrollment as the denominator, and the results are the proportion of all students ever on the school rolls during the three years that the program was in place who utilized particular services. The numbers in parentheses are the estimates one gets if the total enrollment figures are adjusted for the rate of chronic absenteeism in each category.

Eighty-five percent of all students were reached by at least one component of the program. The 15 percent of the total number of students who had no contact with the program includes more males than females. When chronic absentees are taken into account, the proportion of regular attendees who have contact with the program reaches 112 percent. This proportion suggests that a program with a variety of components has the potential to reach even chronic absentees on occasion. Another possibility is that school estimates of chronic absenteeism are higher than they really are. A total of 3,349 individuals are known to have been reached by this program; a weighted chronic absentee rate for the schools would imply that only 2,985 were in regular attendance, suggesting an overestimate, especially among junior high students where the proportion of regular attendees reached by the program is 119 percent of females and 132 percent of males.

Approximately 73 percent of students

Table 3. Percentage distribution of students who participated in the program, by pattern of services used, according to gender and school level

Pattern	All students	Female		Male	
		Jr. high	Sr. high	Jr. high	Sr. high
	(N=3,349)*	(N=872)	(N=1,012)	(N=930)	(N=469)
School contacts only					
Class presentations only	30.4	28.0	23.6	37.7	36.0
Other services (with/without class presentations)	38.2	44.2	28.0	36.7	48.6
Clinic contacts (with/without school contacts)					
Group education only	7.0	10.2	7.1	5.7	2.1
Other services (with/without group education)					
Indiv. counseling; no medical visit	7.9	2.2	1.3	17.7	10.4
Medical visits; no indiv. counseling	1.2	0.9	1.9	0.9	1.1
Both indiv. counseling and medical visit	15.9	14.4	36.1	1.3	1.7
Total	100.0	100.0	100.0	100.0	100.0

*Includes 86 students for whom gender and school information were unavailable.

ever on the rolls heard a classroom presentation, with the proportions higher among junior high students than among senior high students and higher among females than males. It is not clear why the proportion of senior high males is as low as it is (61 percent), since only about 11 percent of this group were considered chronic absentees. Conversely, the proportions in the junior high school, where chronic absenteeism was especially high, are larger than might be expected. Perhaps, since classroom discussions were more frequent in the junior high school than the senior high school, junior high students who were habitual absentees were more likely to make it to one or another session.

The popularity of the rap sessions in school is clear; from 42 percent of junior high males to 56 percent of senior high females availed themselves of this service. Female students were far more likely than male students to take advantage of individual counseling with a social worker at the school; this sex disparity was also true for senior high students in the clinic. However, junior high males were as likely as junior high females to see a social worker in the clinic. The highest proportions registering for both individual counseling and medical visits were found among senior high females. Although not shown in this table, there is a great deal of overlap between individual counseling and medical visits: Eighty percent of all first medical visits among females included a private social work contact, and 81 percent of all first social work visits among females were accompanied by a medical visit.

If the denominators are reduced by the amount of chronic absenteeism in each group, the proportion of junior high students utilizing services rises considerably. In fact, this calculation shows that among regular attendees, a larger proportion of younger males than older males took part in school discussion groups (67 percent compared with 54 percent) and utilized medical services (2.9 percent compared with 2.5 percent).

Another way of evaluating clinic contacts is to use only sexually active students as the denominator. A survey of students conducted as part of the research component provides an estimate of the proportion sexually active (not shown).[4] The number sexually active is computed for each group by multiplying that proportion by the number of students on the enrollment rolls at a representative point in the school year. (For the percentages given below we used the November roll, a useful single-point estimate because it is the first in the year in which transfers are likely to be recorded.) This denominator gives some idea of the prime target population of the clinic services, although the numerator (i.e., clinic registrants) includes a small number of students who were not sexually active. The adjustment for sexual activity makes the biggest difference among younger females: Among the 50 percent of all junior high females who were sexually active, the proportion who made medical visits was 27 percent. Among senior high females, the proportion was 48 percent. Looking at visits to a social worker gives a better idea of the proportion of sexually active males who may have received contraceptive counseling through the program; 21 percent of sexually active junior high males and 12 percent of comparable senior high males did so.

Table 3 summarizes the different combinations of program services that individual students utilized. There are actually 35 permutations, ranging from no services at all to all six of the options offered. Some of the patterns of utilization are representative of fewer than one percent of students. Table 3 collapses the 35 possibilities into six and shows the percentage of students who had contact with the program distributed among the six patterns of utilization. Thirty percent of the students were exposed only to classroom presentations. While this level of exposure is minimal, it does mean that these students knew of the program and its staff. Had they wished, they could have availed themselves of the program's more voluntary components, as did the remaining 70 percent of students who participated in the program. Half of those who utilized other services (38 percent) participated in activities within the school health suite but never visited the clinic. Those making use of voluntary services ranged from 62 percent of junior high males to 76 percent of senior high females.

Overall, 31 percent of the students utilizing one or more of the services attended the clinic at some time. About seven percent participated only in the group activities that occurred there. (Some 50 students who participated only in the group activities had no school contacts with the program, not even a classroom presentation. Many, particularly younger males, were not on the school enrollment lists, so it is possible that they were adolescents in the community who came with their friends and received group service for which they were not technically eligible.) As Table 3 shows, only small proportions of female students had a social work visit in the clinic without a medical visit. Thirty-eight percent of senior high girls had both a medical and a social work visit; this was true for 14 percent of junior high female students, but fewer than two percent of male students in either school. Most of the males who registered for an appointment had only a social work visit, for reasons discussed previously.

In general, detailed patterns of utilization not shown here reveal a tendency among students making medical visits,

and to a large extent among those seeing social workers, to seek many different types of contact with the staff. The modal group of medical visitors had made use of all six service components. The use of a wide range of services is consonant with the expressed intent of the program that medical services be linked with education and counseling. The school components, conceived as a bridge from the classroom to the clinic appear to have served their intended purpose, while serving as the primary components of the program for many students who received all their services within the school.

Discussion

The material that has been presented outlines not only how the model was conceived but how it functioned, not only what the program offered but what was used. This project was highly focused in its goals, and generally provided only reproductive health education and services. Medical referrals were available, but these data cannot give reliable estimates of the demands a more comprehensive medical clinic might experience. However, the implications of the data for the staffing and design of similar programs are many.

The number of student-staff contacts can be extremely large in a program that is well accepted by the students. Decisions as to whether or not to accommodate all demands for repeated contacts have staffing implications. Of note is the important role played by the social worker in meeting the high volume of demands placed upon a sympathetic staff.

- Although the classroom maximizes contact and is useful for some purposes, small groups were especially popular among these adolescents. The school appears to be an excellent location for small-group discussions, since the data suggest that relatively few students attended group sessions in the clinic unless they also came for some other clinic service. Consequently, a large proportion of students reached by the program might have been missed without this school component. Furthermore, most clinic attendees are sexually active; therefore, it may be that only in the school is there a real opportunity to delay the onset of coitus.
- Group education in the clinic reached fewer nonregistrants than had been anticipated. Data analyzed here cannot validate the staff's impressions that attendance for educational purposes often preceded attendance for services that required registration. If that impression is correct, it would indicate that students used group education until they felt comfortable enough to ask for individual services. At this point we can only say that educational opportunities in the clinic were well used by those who came for individual services; perhaps the needs of nonregistrants were adequately met, as they should have been, within the school.
- Individual counseling can take place in either a school or a clinic location, and almost 40 percent of students who received this service in one location did so in both. Counseling is often an on-going process and consumes a lot of staff time.
- Senior high females require the greatest proportion of reproductive health services. They are more likely to be sexually active than younger students, and many who are engaging in coitus use oral contraceptives, a method that requires attendance at a medical facility. Consequently, programs for senior high school girls should plan to deliver large numbers of clinic services.
- The mean number of staff encounters per male student is about one-half the number for females. But even senior high males, the group least likely to utilize clinic services, seek out small group sessions in the school. A relatively large proportion of junior high males use the social workers in the clinic as a source for condoms as well as information and counseling. The fact that these staff members were female did not seem to hinder their ability to serve as confidants, educators and counselors to young males.
- The peer resource students utilized a large amount of staff time. These students appear to profit on an individual basis from their involvement, but their training and nurturing is on-going and intensive. The intrinsic value of their services may be worth the investment, but these data suggest that they should not be viewed as a means of saving staff input.
- Programs may well have a small number of clients who use inordinate amounts of staff time. Median usage rates appear to be in a reasonable range and are considerably lower than the means, which are influenced by high extremes. The question must be raised as to whether the continuing involvement of the staff in long-term, serious problems is a judicious use of their time or whether referral is a wiser course.
- The concept of a school-linked clinic operation—or conversely, a clinic-linked educational and counseling project in the school—is a model that works in terms of the flow from one setting to the other. Approximately one-quarter of the students encounter the staff in both settings. Some who attend discussions in the school health suite may not wish to enter a clinic, and would not do so even if it were located in the school. For others, in-school contact can serve as a bridge to the clinic, where counseling and medical services can proceed without the limitations of school hours, calendars and administrative controls.
- Formal efforts to involve parents generally failed. Information was not recorded on the limited number of contacts with parents, who were often seen on an individual basis but who rarely participated in meetings about the program. Students were encouraged to tell their parents that they utilized the program and many did so, but a great deal more time must be invested if real and continuing parental involvement is desired. Similarly, greater faculty involvement would have been useful, but that, too, would require time not allocated in this program.

In conclusion, we believe the results of the Baltimore pregnancy prevention program reported earlier[3] reflected an impact on the school populations that was substantially greater than could be expected if this had been a clinic-only program. By putting school and clinic components together, the program created an atmosphere that legitimized discussions of sexual conduct, contraception, abstinence and pregnancy among those who used its individual services and those who did not. Although its focus was narrow and specific to reproductive health, its offerings in counseling and education and in values clarification and life planning were broad. In combination with the positive effects of the program, these utilization data suggest that the model was highly acceptable to the students, that the staff was seen as a valuable resource and that both the clinic and school components contributed to the program's success.

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Evaluation of a Pregnancy Prevention Program For Urban Teenagers

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In this article, we report on a school-based program for the primary prevention of pregnancy among inner-city adolescents that was designed and administered by the staff of The Johns Hopkins School of Medicine's Department of Pediatrics and Department of Gynecology and Obstetrics. The project was carried out with the cooperation of the administrators of four schools in the Baltimore school system—two junior high schools and two senior high schools. The program provided the students attending one of the junior high schools and one of the senior high schools with sexuality and contraceptive education, individual and group counseling, and medical and contraceptive services over a period of almost three school years. Students in the remaining two schools received no such services, but provided baseline and end-of-project data, and serve as the control sample.

An evaluation component, designed to assess changes in the knowledge, attitudes and behavior of the school populations, was built into the project from the outset. The evaluation was based on aggregate data collected from the students through self-administered questionnaires. The surveys were administered in the two program schools at four different times: once before the program began (at the start of the school year), and again during the spring term of each of the following three years. At the two control schools, questionnaires were given to the students at the beginning and at the end of the experimental program period.

"The rapid effect on clinic use exerted by the [program] . . . suggests that it is the accessibility of the staff and of the clinic, rather than any 'new' information about contraception, that encouraged the students to obtain services."

The questionnaires asked the students for detailed information on their knowledge, attitudes and behavior relative to sexual conduct, contraception, and teenage pregnancy and parenthood. It asked them about communication with their parents and partners, their educational aspirations and a range of demographic and background variables. Students in the seventh and eighth grades received a slightly abbreviated series of questions.

Parents were notified of the survey in advance and were informed that their children could be withdrawn from the study if they wished. Only two parents from the four schools made that request.

The junior high school in which the pregnancy prevention program was introduced is a community school serving an all-black, inner-city population. The average socioeconomic status in the community is low, and a high proportion of the students attending the school live in high-rise public housing. Almost nine out of 10 of the students qualify for the school's free lunch program. The senior high school involved in the program serves as both a magnet and a community school. For this reason, the small ninth-grade class and subsets of students in grades 10–12 are of somewhat higher academic standing than the other students, and are drawn from the entire city, while the remaining students in those grades come from the same general area that feeds the junior high school. All the students are black, and almost three-quarters qualify for free lunches. At the baseline survey, 667 male students and 1,033 female students from these two schools completed the questionnaire—98 percent of the students present on the day the survey was administered. Subsequent rounds were completed by smaller numbers as a result of lower attendance and enrollment rates in the two schools; in most cases, refusal rates continued to be about 2–3 percent. At the final survey, nearly three years later, 506 male students and 695 female students answered the questionnaire.

The students used as a control group came from schools with racially mixed populations, but only the black students are used for comparison. The socioeconomic status of these students is similar to that of the students attending the two program schools. At the baseline survey, 944 male students and 1,002 female students completed the questionnaire. At the end of the project, 560 boys and 889 girls answered the questionnaire.

The baseline survey data revealed high levels of sexual activity in both the program[1] and the nonprogram schools. Almost 92 percent of boys in the ninth grade of the program junior high school were sexually active, as were 54 percent of the comparable girls. In the senior high school, 79 percent of all the girls were sexually active. Even at the lower grade levels, the percentages reporting that they were sexually experienced were relatively high: Forty-seven percent of the girls in the seventh and eighth grades had had intercourse. Approximately 71 percent of sexually active male and female students in the junior high school, and over 89 percent of

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those in the senior high school, said they had practiced some form of contraception. However, only 56 and 73 percent, respectively, had used any method at last intercourse. Among the sexually active girls in the seventh and eighth grades, 11 percent had been pregnant. In the ninth grade of the junior high school, this proportion rose to 20 percent, while among sexually active young women in the senior high school, 22 percent had had a pregnancy.

The pregnancy prevention program initiated in the two schools selected for the study utilized the services of a social worker and a nurse-midwife or nurse practitioner based in each of the schools. These professionals made presentations at least once a year in each homeroom. The discussions dealt with services offered in the clinic, as well as a variety of other topics related to reproductive health. For several hours each day, one or two of the staff members assigned to each school made themselves available (in the school health suite) to the students for individual or group counseling. In the afternoon, these same staff members provided services in a special clinic, which was located across the street from one of the program schools and a few blocks away from the other. In this after-school clinic, the professionals led discussion groups and offered individual and group counseling and education. Strong emphasis was placed on the development of personal responsibility, goal-setting and communication with parents. Reproductive health care—including contraceptive counseling, pregnancy testing, other medical services and referrals—was provided, as were diagnosis and referral in other health fields. Students could come simply to talk in the waiting room, to see films or to take part in group discussion, whether or not they registered for services. Young men and women could enroll in the clinic and were eligible for the services as long as they remained in school. All services were free. Thus, both educational and medical services were available to the students. A single professional staff provided continuity and a bridge for young people between the school and the clinic setting.

The pregnancy prevention program began in November 1981. The clinic opened in January 1982, and services continued to be provided until June 1984. Throughout the duration of the project, the basic sex education curriculum, which is mandated by state law and is offered in all the junior and senior high schools in Baltimore, remained in place.

Some Methodological Problems

The evaluation of school-based programs presents some special problems. First, there is likely to be a high level of movement in and out of individual schools—even those that serve specific communities—because of graduation and also because of student transfers and reassignments that take place throughout the year. Second, it is often difficult to collect data reflecting behavior "before" and "after" initiation of the program at the same time of year (when the aggregate data would, ideally, represent student samples with the same age distribution). For example, even if baseline data are collected in the fall, at the start of a new program, follow-up data may have to be gathered in the spring, in order to include the experience of students who will graduate and leave the school. Third, no two schools in any school system are truly comparable, given the wide differences that exist between them in geographic and social setting, economic, racial and gender mix, and curriculum and administrative styles and philosophies. Consequently, control schools should not be compared directly with program schools. However, they help establish the presence or absence of secular change during the experimental period.

As a result of these problems, which are common to all school-based studies, our evaluation had to address a number of issues: Because attendance at the schools varied considerably between the fall and the spring terms, a smaller sample of students was available for follow-up than at baseline. The differences could not be assumed to be completely random, since absenteeism and pre-

Table 1. Percentage of female students correctly identifying the fertile period of the menstrual cycle; and percentages of female and male students who believe that the less-effective methods* are good for preventing pregnancy; by grade level, according to years of exposure to the program; program and nonprogram schools

Years of exposure to the program	Programs schools, by grade										Nonprogram schools, by grade							
	Total†	Adjusted total†,‡	7	8	9a	9b	10a§	10b§	11	12	Total†	Adjusted total†,‡	7	8	9	10	11	12
Females correctly identifying fertile period																		
0	28.2	29.7	13.9	25.7	28.6	26.9	14.3	31.3	32.6	34.6	30.5	30.7	28.6	33.3	37.5	28.6	32.3	24.1
1	38.7	na	31.7	38.7	40.5	42.9	44.4	39.1	33.8	50.0	u	u	u	u	u	u	u	u
≥2	na	44.4	—	40.8	46.5	††	35.3	55.9	34.8	46.7	36.4	37.9	30.0	30.8	42.9	37.5	46.2	41.9
Females believing less-effective methods are good at preventing pregnancy																		
0	39.9	37.8	43.2	52.1	57.5	46.8	60.0	43.5	24.5	25.8	50.9	46.6	62.4	57.1	50.0	55.2	32.4	41.9
1	26.1	na	43.1	44.9	40.2	17.5	33.3	21.3	18.2	14.9	u	u	u	u	u	u	u	u
≥2	na	23.8	—	52.9	43.5	††	24.5	11.8	14.9	17.9	45.8	43.5	61.1	61.9	38.9	44.3	47.1	30.6
Males believing less-effective methods are good at preventing pregnancy																		
0	53.7	53.3	53.8	41.8	66.2	70.0	51.3	61.8	43.5	45.7	48.8	49.7	47.8	50.0	26.7	59.4	55.9	51.8
1	42.9	na	50.7	39.8	59.2	20.0	37.8	31.7	40.4	40.5	u	u	u	u	u	u	u	u
≥2	na	34.4	—	47.2	49.3	††	36.4	16.7	30.4	30.3	59.2	60.3	52.9	66.7	75.0	59.1	58.5	41.7

*Withdrawal, rhythm and douche.

†Standardized on the grade distribution of the program schools at the time of the baseline survey.

‡Omits grades exposed to the program for only one year.

§Grade 10a students came from the program junior high school; 10b, from junior high schools that had no program.

**These students could not have been exposed to the program for more than one year.

††Grade 9a is in the junior high. Grade 9b is the equivalent grade in the senior high school. Since no 9b students came from the program junior high school, they could not have been exposed to the program for more than one year.

Notes: In this and subsequent tables, u=unavailable; na=not applicable; and years of exposure for nonprogram students refer to the interval since baseline survey. All differences between exposures zero and one and between zero and two or more in the program schools are statistically significant ($p<0.001$ or $p<0.01$). In the nonprogram schools, none of the changes are statistically significant. See the appendix for a further discussion of these notes.

mature dropping out are likely to occur disproportionately among the less-motivated students. (The same potential bias would be apparent in both program and control schools.)

Second, the student sample is slightly older at the three follow-up surveys than it was at the time of the baseline survey. Generally, the age differential will have little effect on variables that are not highly age-dependent. It could have some effect on those that reflect cumulative experience; we have used life-table analysis wherever appropriate to correct for the age difference.

Third, because students move into and out of the schools, the duration of program exposure cannot be predicted by grade. For purposes of evaluation, subgroups are best defined by their actual exposure to the program. However, age distributions vary between exposure groups: Longer exposure is associated with older ages. Furthermore, exposure can vary within grade. Those who have just entered a program school in a given year, or who entered a senior high from a junior high without the pregnancy prevention program, are available for only one year of exposure. Exposure groups must, therefore, be controlled by grade level and by school (and, sometimes, by school of origin). Despite the large size of the initial sample, numbers remaining in some grade/exposure subgroups may be substantially reduced by the end of the project.

In the appendix at the end of the article (page 125), we discuss in greater detail some of the practical problems posed by the need to define appropriate groups for comparison, and explain the methodology introduced to address this need. The appendix also contains a table showing the size of the samples in the program schools at baseline and at each of the three follow-up surveys, by the student's gender and grade level.

The units of interest to this article are "exposure groups," defined as groups of students exposed to the pregnancy prevention program for zero, one, two or three years. Zero exposure is based on information obtained at the baseline survey. One-year exposure is based on data from the second round of the survey plus that subset of students interviewed in the third round who had entered the program schools in the second year of project activities. Two-year exposure includes all students in the third round of questionnaires who had attended a program school since the program's onset plus those interviewed in the fourth round who had entered the school in the program's second year. Finally, three-year exposure includes the subset of respondents in the fourth round who were exposed to the program for all three years of its operation.

Changes in Knowledge and Attitudes

Students in grades 9–12 were asked 10 questions on the correct use of specific contraceptive methods and on the risk of pregnancy. At the time of the baseline survey, female students scored an average of 6.8 correct answers; the average increased from 5.4 among those in the ninth grade to 7.4 among students in the 12th grade. Subsequent rounds of the survey show that the number of correct answers increases in all grades over the course of the program, and significantly* overall. However, the change is not dramatic, and the overall average after two or more years of exposure to the program is 7.8 correct answers. Among female students in the 11th and 12th grades, the highest level of correct knowledge reached after two or more years of exposure is 8.2. In the control schools, where correct knowledge started at levels comparable to those found in the program schools, the high point among female students does not exceed a correct average of 7.2 by the end of the program.

A significant increase in knowledge occurs among male students at all durations of exposure to the program, while the changes observed in the nonprogram schools among males and females do not achieve significance.

As a further measure of knowledge, students were asked to identify the time during the menstrual cycle when conception is most likely to occur. If the answer was "at any time during the month," this was considered as correct as "about two weeks after period begins," since either can be interpreted as a "protective" response. Table 1 (top panel) shows the trends in the percentage of female students at the program and nonprogram schools who answered the question "correctly." The table shows that among female students exposed to the program, levels of knowledge increase significantly over time,† especially among the younger girls. Among male students (not shown), knowledge of the fertile period shows a slight, though not statistically significant, upward trend. As the top panel of Table 1 also shows, among the female students attending the nonprogram schools, knowledge of the fertile period increases slightly in the course of the project period. However, the changes are not statistically significant. Among males, there is actually a decrease (not shown).

It should be noted that even in the program schools, it is rare for more than 50 percent of female students to answer correctly. There are, nevertheless, indications of a pattern of change that may be important: The acquisition of correct knowledge appears to be occurring at an earlier age, so that following exposure to the program, younger students are achieving higher scores than older students had attained prior to the intervention.

The second and third panels of Table 1 record the proportions of female and male students who consider that withdrawal, the rhythm method and douches are "good" or "very good" methods for avoiding pregnancy. A significant downward trend in the level of misperception emerges among students of both sexes, at one or more year's exposure to the program. By contrast, although there is also an insignificant decrease among girls attending the nonprogram schools, a clear trend is not evident, since some grades appear to improve their knowledge, while others regress.

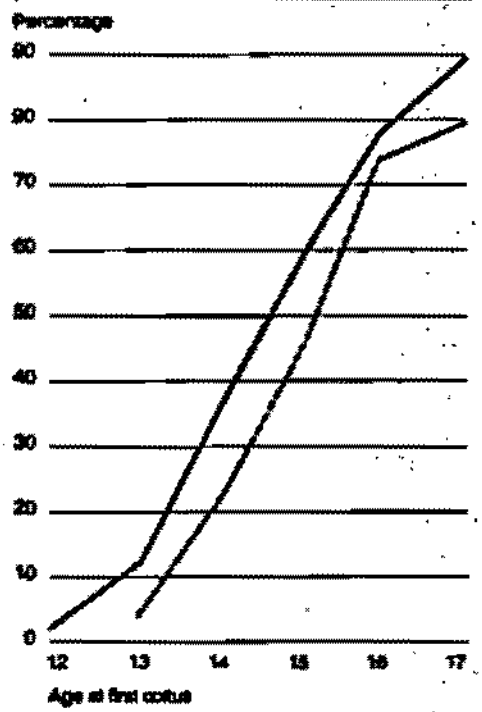
The questionnaires also probed student attitudes toward three issues: the acceptability of teenage pregnancy; the "best" or ideal age to have children and to marry; and when sexual relationships are "okay." Our earlier studies of this student sample found a significant relationship between having a positive attitude toward adolescent childbearing and the ineffective practice of contraception, although only a small percentage were supportive of adolescent parenthood.[2] The present study shows little consistent change in this attitude after exposure to the program. Positive support for adolescent childbearing declines among females, but does not change in any one direction among males.

Analysis of the responses shows generally slight and inconsistent attitudinal changes in the other two areas. A large proportion (often, over 50 percent) of both male and female students cite an ideal age for childbearing that is lower than the age they consider to be ideal for marriage. After exposure to the program, the percentage declines among the girls but not among the boys. In the nonprogram schools, in contrast, there is no such change. In fact, an increase occurs among female students. On the third measure—finding sexual intercourse acceptable between individuals who have just met or who date occasionally—there is no consistent change seen in the program schools, while a decline that is not statistically significant occurs among students in the nonprogram

*Significance was measured by the t-test.

†Measured on the basis of the Mantel-Haenszel summed chi-square. However, since the observations are not truly independent and the sample is not a probability sample, the meaning of the significance levels should be interpreted with caution. A level of $p<0.01$ is required for significance. All significance tests in Tables 1, 2 and 3 were performed on the basis of the actual numbers, by grade, not on the basis of the standardized totals.

Figure 1. Cumulative percentage of female high school students aged 15 and older who initiated coitus during the three years before the baseline survey and during the three years before the final program survey, by age at first coitus



schools. These findings appear to suggest that the program occasioned less of a change in attitudes than it did in knowledge.

Changes in Behavior

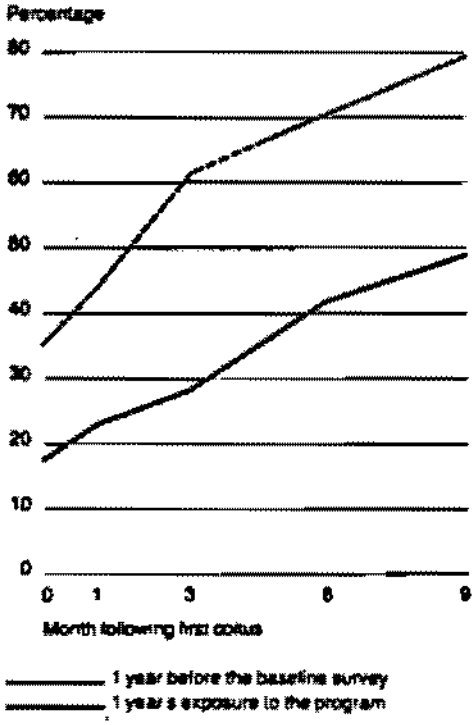
In terms of behavioral change, we had predicted that in view of the very high rates of sexual activity prevailing in the study schools, it would be difficult for the program to have any impact on the timing of initiation of intercourse. The broken line in Figure 1 reflects the cumulative percentage of female students 15 years of age and older in the program senior high school who became sexually active during the course of three years of exposure to the program. The solid line reflects, for the zero-exposure group in the same school, their histories over a similar period of time, before the program was in place. It thus serves as the comparison. (The points on both curves are derived from standard life-table analysis. See the appendix for details.) The results of this comparison show an apparent postponement of first intercourse among high school students exposed to the program for three years. The median length of the delay (not shown) is seven months (from 15 years and seven months before the program to 16 years and two months afterwards). The smaller delays found after one or two years' exposure are hardly surprising, since such changes cannot be expected in a short period of time and require early precoital intervention.

Of even greater interest than the median age at first intercourse is the shape of the curves shown in Figure 1. While both curves demonstrate similarly rapid initiation of sexual intercourse between the ages of 13 and 16, at ages 14 and 15 there is a substantial difference in the proportions who have become sexually active. At age 14, for example, about two-thirds more girls had become sexually active before the program started as had done so after three years of exposure to the program.

Table 2 illustrates the effects of the program on attendance at a birth control clinic.* The table shows that the proportion of sexually active students in the program schools who attended a clinic rises at all grade levels for both male and female students. In fact, among male students in the junior high school, attendance climbs to levels that parallel those of senior high school female students prior to the program's introduction. The overall changes are statistically significant. In the control schools, no consistent changes in clinic attendance occur.

Again on the basis of life-table analysis, Figure 2 illustrates the relationship between the date of first coitus and the timing of first clinic attendance among female students exposed to the program for one year.† The graph reveals striking and highly significant differences between the "before" and "after" groups in their probability of having been to a clinic or doctor for birth control services, by month following first coitus. After one year of exposure to the program, a higher percentage of girls than before made a visit while they were still virgins, and increased percentages attended a health facility in the months soon after initiation of intercourse. A similar comparison among students exposed to the program for three years (not shown) indicates that 92 percent of female students aged 15 and older had attended a professional facility by the end of the observation period. There were large increases in attendance among the younger students, and these were even greater than those found among older girls, as Table 2 indicates.

Figure 2. Cumulative percentage of sexually active female students in grades 9–12* who attended a birth control clinic, by month following first coitus, one year before the baseline survey and after one year of exposure to the program



*Excludes students who initiated sexual activity more than one year before the survey.

Table 3 (page 124) shows trends in the use of the pill at last intercourse among sexually active female students and in the use of any contraceptive method for which the partners are prepared in advance (i.e., any except withdrawal, rhythm or douche) among female and male students. All such methods require forethought on the part of one of the two partners and are, therefore, an indication of a certain level of preparedness for sexual intercourse.[3]

At the baseline survey, we found that pill use generally increases with age, as might have been expected. However, after exposure to the program, the percentage using increases further still among all grade levels. Differences in both time periods are statistically significant. Moreover, even with brief exposure to the program, the increases are more pronounced among younger than among older students. With increased exposure to the program, the differentials by age diminish. Finally, the table shows, among younger students, pill use at last coitus increases with program exposure to levels higher than those reported by some groups of

*Male students were asked whether they had "ever been to a birth control clinic." Female students were asked whether they had "ever been to a clinic or doctor to get birth control."

†The comparison involves students involved in the program for only one year, since this is the only group not limited by age. It should be noted that the figure does not separate from the total those girls who attended the school clinic only.

older students before the program began. This accelerated adoption of effective contraception can be expected in the long run to reduce the high risks of pregnancy experienced by young women who initiate sexual activity in their early, postpubertal years.

As Table 3 also indicates, the difference between younger and older students that was noted in use of the pill is smaller for use of all methods requiring advance preparation. This finding is a result of the widespread use of the condom at younger ages. Increases in the use of these protective methods are significant for both males and females. In the nonprogram schools, by comparison, use of these methods declines in seven of the grade/sex groups and increases in five.

Use of no contraceptive method at last intercourse is reduced to extremely low levels after exposure to the program (not shown). In all instances except one subgroup of one grade, fewer than 20 percent of female students exposed to the risk of pregnancy were unprotected by any method at the time of their most recent coitus, after exposure to the program for two or more years. This is true even at the seventh and eighth grade levels, at ages often associated with poor contraceptive use. In contrast, in three of the grades at the nonprogram schools, 44–49 percent of the students were using no method of birth control at all, and only one grade reached the level of protection found in the program schools.

Pregnancy Rates

What effect, if any, do these significant changes in clinic attendance and contraceptive practice have on pregnancy rates? Among the issues involved in calculating changes in schoolwide pregnancy rates from aggregate data is the fact that the Baltimore public school system allows students who become pregnant to transfer to a special school for pregnant girls. Since lists of these transfers from the program and control schools were available, this issue could be addressed: We were able to ascertain which of these young women had, in fact, been part of one of the exposure cohorts, even though they were no longer attending the study schools when follow-up rounds of the survey were administered. These girls, unsurprisingly, represent from 10 percent to 20 percent of all pregnant students reported in each school year and an even higher proportion of those who carried to term. By adding the girls who went to the special school to their original cohorts, when and where appropriate, and by determining their correct exposure group, using life-table analysis, we can more precisely estimate the effects of the program on pregnancies. (In this part of the analysis, the second round of the surveys constitutes the baseline, in order to ensure strictly comparable age distributions. Most of the pregnant girls in round 2 had, in fact, conceived before the clinic opened. On the other hand, it is possible that by using round 2, we may minimize program impact, since pregnancy rates *could* have begun to fall in the very first months of the project.)

Figure 3 is based on a series of life-table analyses and shows the cumulative percentages of sexually active students in grades 9–12 of the program and nonprogram schools who became pregnant during the 16-, 20- or 28-month period prior to the survey of interest. For the program schools, the 16-month data are based on information obtained in round 3. The findings for 20 and 28 months are based on round 4. For the nonprogram schools, the comparison is between the data from the baseline and final surveys. (For further details, see the appendix.) As the figure reveals, among students exposed to the program, there appears to have been an increase in pregnancies of 13.0 percent after 16 months of exposure to the program. Among nonprogram students, the equivalent increase is 50.0 percent. However, after 20 months, the conception rate falls by 22.5 percent among program students, whereas it rises by 39.5 percent among nonprogram girls. Finally, after 28 months, the pregnancy rate declines by 30.1 percent, whereas it increases by 57.6 percent in the schools that

Figure 3. Cumulative percentage of sexually active females in grades 9–12 of the program and nonprogram schools who became pregnant during 16, 20 or 28 months prior to the baseline survey or subsequent survey, by duration of program exposure; and percentage changes in these proportions

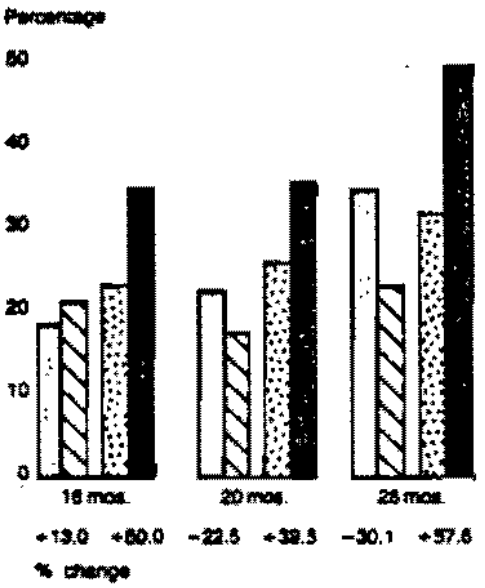


Table 2. Percentages of sexually active female and male students who had attended a birth control clinic,* by grade level, according to years of exposure to the program; program and nonprogram schools

Years of exposure to the program	Program schools, by grade										Nonprogram schools, by grade							
	Total†	Adjusted total†,‡	7	8	9a	9b	10a§	10b§	11	12	Total†	Adjusted total†,‡	7	8	9	10	11	12
Females																		
0	49.4	51.8	32.7	32.8	33.3	23.8	50.0	42.5	58.9	69.3	57.6	62.7	13.3	25.0	38.5	61.2	67.6	82.6
1	63.3	na	38.2	57.3	56.1	41.0	61.6	58.7	76.0	71.6	u	u	u	u	u	u	u	u
≥2	na	70.9	—	64.5	67.1	††	62.5	70.4	75.7	75.0	65.7	59.6	16.7	20.0	47.1	55.1	71.2	75.0
Males																		
0	15.6	16.3	12.4	23.8	18.3	12.5	8.8	10.3	19.7	14.5	10.4	11.6	6.6	19.0	5.3	10.5	13.6	9.4
1	27.5	na	37.1	33.7	25.9	16.7	20.0	17.4	25.6	26.6	u	u	u	u	u	u	u	u
≥2	na	47.9	—	61.9	44.7	††	63.6	33.3	34.3	63.6	10.6	12.1	6.6	10.5	8.3	15.2	13.7	10.1

*Female students were asked whether they had "ever been to a clinic or doctor to get birth control." Males were asked whether they had "ever been to a birth control clinic."
Note: For the meaning of all other symbols, see footnotes to Table 1.

Table 3. Percentage of sexually active female students who used the pill at last intercourse; and percentages of sexually active female and male students protected by any method requiring advance preparation* at last intercourse; by grade level, according to years of exposure to the program; program and nonprogram schools

Years of exposure to the program	Programs schools, by grade										Nonprogram schools, by grade							
	Total†	Adjusted total†,‡	7	8	9a	9b	10a	10b	11	12	Total†	Adjusted total†,‡	7	8	9	10	11	12
Females who used the pill at last intercourse																		
0	31.5	32.9	21.5	24.8	6.5	20.0	30.0	25.2	34.1	49.1	30.7	32.7	21.4	7.7	0.0	29.8	40.3	48.4
1	37.5	na	25.0	31.8	25.1	25.6	60.0	34.6	43.6	42.4	u	u	u	u	u	u	u	u
≥2	na	49.9	***	30.6	32.2	††	50.0	47.2	50.7	61.0	34.4	35.9	20.0	25.0	31.3	22.2	37.5	52.4
Females protected by a method requiring advance preparation at last intercourse																		
0	55.8	57.3	54.9	48.2	41.3	50.0	30.0	54.1	62.0	65.6	54.7	54.8	50.0	23.1	61.5	48.9	53.9	54.1
1	67.7	na	60.9	57.3	66.7	67.2	70.0	65.4	72.8	69.7	u	u	u	u	u	u	u	u
≥2	na	78.8	***	76.4	67.5	††	79.2	75.8	72.0	67.0	64.0	63.4	60.0	60.0	56.3	37.5	43.8	71.4
Males protected by a method requiring advance preparation at last intercourse																		
0	48.0	47.8	54.1	44.6	45.8	60.0	33.3	48.9	48.7	56.3	52.2	50.8	56.8	44.4	62.5	43.2	45.8	60.6
1	59.8	na	59.1	53.6	61.0	33.3	71.4	55.4	61.0	68.3	u	u	u	u	u	u	u	u
≥2	na	55.6	***	64.9	43.4	††	78.9	41.7	62.1	65.5	49.7	51.9	38.9	42.1	64.5	54.7	55.3	50.6

*Any method except withdrawal, rhythm or douche.

Note: For the meaning of all other symbols, see footnotes to Table 1.

had no pregnancy prevention program. Pregnancy data were subjected to many types of analysis, including examinations of pregnancies in consecutive 12-month periods and comparison of differentials by outcome of pregnancy. All confirmed the conclusion that the program led to decreases in the pregnancy rates of these 9th–12th-grade students.

Because the numbers of sexually active students in the seventh and eighth grades were small, and because we have much more limited information on their pregnancies, it is difficult to evaluate changes among these students. There appear, however, to be small reductions in pregnancy rates among girls 15 years old and younger.

Concurrently, however, larger increases in pregnancy rates appear to have taken place in the nonprogram schools. We believe, therefore, that the program assisted these younger teenagers in avoiding the kinds of increases observed citywide, and even lead to some decrease in their pregnancies.

Conclusions

The brief, though intensive, pregnancy prevention program introduced in two Baltimore schools has demonstrated significant changes in several areas of adolescent knowledge and behavior—changes that have major implications for the formulation of public policy and for program design. The results reported in this article are based on the school populations as a whole, and do not compare the individuals who used the program services with those who did not. It is highly noteworthy, therefore, that the differentials are nonetheless statistically significant, and reflect a broad impact on the school community.

Over the course of the two and a half years that the program existed, changes in sexual and contraceptive knowledge occurred. These are both areas in which it has already been demonstrated that educational programs can make a difference.[4] The rapid effect on clinic use exerted by an intervention program designed to supplement the basic sex education program already in place suggests that it was the accessibility of the staff and of the clinic, rather than any "new" information about contraception, that encouraged the students to obtain services.

Our study has shown attitudes to be somewhat more resistant to change than practice, but in this area there was less room for change to occur. As we reported earlier, support for adolescent childbearing or for casual sex was already very low in this school population before the program began.[5] This seemed to suggest that more overall improvement was to be gained by helping students holding positive attitudes toward pregnancy prevention translate those attitudes into action than by attempting to change the attitudes of the few who do not share that view. With majority opinion already supportive of contraception and delayed childbearing, that is apparently what the program accomplished.

While the changes in the age at first intercourse are not large, they are substantial enough—in the direction of delay—to refute charges that access to such services as those provided by the program encourages early sexual activity. The program's ability to effect any further changes may well have been limited by the brevity of the project and by the age of the students when they were first reached. The fact that age at first intercourse was delayed at all is impressive, and particularly important in view of the demonstrated high risks of early exposure to pregnancy.[6]

Similarly, the results indicating that students attended clinics sooner after initiating sexual activity than had been the case are important. The project appears to demonstrate that if students in junior high schools are given access to nearby services and if they are offered information and continuity of care, they will use such services, and at levels comparable to those shown by older teenagers. That was clearly the case in this demonstration project, where confidential services were provided free of cost and in a sympathetic setting. Furthermore, the percentage of students going to a clinic or doctor before their first intercourse increased, as did attendance during the first months of sexual activity. Both these measures of preventive behavior were low at the time of the baseline survey, as they were among clinic patients observed in an earlier study,[7] and both increased markedly.

One of the most striking findings from the project is the demonstration that boys in the junior high school used the clinic as freely as girls of the same age. In view of the growing call for research into ways of attracting male clients to such facilities, the interest shown by these boys appears to be of some importance.

The changes in contraceptive use demonstrated by the evaluation are promising. Again, the results among the younger students suggest that early risk of pregnancy can be reduced with early attendance at a clinic. Use of the condom did not change consistently, but appeared to fluctuate with the use of female methods in such a way that the overall use of all methods requiring advance preparation increased significantly.

Increased and prompt clinic attendance and the resulting increased use of effective methods of contraception appear to have had a significant impact on pregnancy levels. The full extent of this impact may not have been fully realized by the time follow-up was completed. Each of the measures we used confirms the finding of a reduction in pregnancy rates among older teenagers and a halt in the rapid increases—by some measures, a decrease—in the rates among younger adolescents. In the face of rising rates in many U.S. cities, the marked reduction in pregnancy demonstrated here is to be welcomed.

As successful as this program appears to have been, a longer period than that involved here is probably needed to achieve and to measure the full impact of interventions such as these. Many effects may not be quick to coming, and although our study reports many significant effects, one would hope that with time, even more young people might be affected. Perhaps the evidence we present will encourage the investment of funds and energies in similar programs, over a longer term.

Furthermore, early program exposure is clearly of some importance; interventions will have to take place before young people develop behavior that places them at risk of early, postpubertal conception. The effects of this program apparently were somewhat greater among younger than among older students. One of its major effects, indeed, is that it appears to have encouraged the younger sexually active teenagers to develop levels of knowledge and patterns of behavior usually associated only with older adolescents. This accelerated protective behavior, coupled with evidence that first coitus was not encouraged but, in fact, postponed, should provide solid support to the current movement toward the introduction of school-based clinics. The model described here is a combined school and clinic operation that offers full reproductive health services and that is located close to, but not in, the school. When two schools are close enough to share a clinic, this may be a particularly economical model; further analysis of the component services may suggest an even more parsimonious design that could achieve many of the same results.

In conclusion, these findings suggest the efficacy of a program with pregnancy prevention as an explicit objective. Such a model requires a program and a staff capable of addressing a wide range of reproductive health issues. It does not preclude a broader range of adolescent health services (since these, too, are often badly needed), but it does suggest that meeting the sexual concerns, medical needs and contraceptive requirements of high school boys and girls is in itself an extremely challenging and demanding responsibility for program designers. More broad-based initiatives would, no doubt, have to include in their staffs some health educators, social workers, nurses or doctors with a strong commitment to the reproductive health of young people if they seek to replicate these results.

Why did this program work? Access to high-quality, free services was probably crucial to its success. Professional counseling, education and open communication were, no doubt, also important. All these factors appear to have created an atmosphere that allowed teenagers to translate their attitudes into constructive preventive behavior. Precisely which separate components of the program contributed most to its success remains to be determined. Our understanding of similar school-based services for young people may well depend on the willingness of providers to scrutinize their interventions closely, on the ability of researchers to evaluate those interventions and on the cooperation of schools in making available the types of data needed to carry out such evaluations.

Appendix

• *The tables.* Problems associated with movement into and out of schools are common to all school-based studies; each setting will involve some local differences, although the specific details may vary. In this case, because students graduated from the junior and the senior high schools involved in the project, because a new middle school was opened in the vicinity of the two schools during the course of the project, and because of the normal flow of new students into all grades, the sample population had a constantly fluctuating composition. In order to allow for these aspects of the study population, the data are controlled by the student's grade level (as a proxy for age) and by exposure to the program.

This treatment also allows us to deal with a specific problem affecting only one exposure of one grade: At the time of the final round of the survey in the program schools, the 12th-grade sample was biased, because a few sections omitted on that day turned out to be nonrandomly selected. These sections included the most motivated, advanced students, thereby making comparisons with rounds 1, 2 and 3 of the survey invalid. To correct for this problem, for the 12th-grade groups in the category "two or more years," those exposed for three years are excluded from the analysis.

Appendix Table 1. Number of program-school students surveyed, by years of exposure to the program and gender, and average age of students, according to grade level

Measure	Total	Grade level							
		7	8	9a*	9b†	10a‡	10b§	11	12
YEARS OF EXPOSURE									
0									
Male	657	148	116	109	11	20	96	85	72
Female	1,033	125	151	103	44	17	209	175	209
1									
Male	597	194	112	93	17	16	151	96	48
Female	1,148	195	152	103	78	16	319	156	127
2									
Male	262	na	115	69	na	15	13	109	41
Female	601	na	103	62	na	17	79	241	99
2									
Male	91	na	na	39	na	9	na	13	na
Female	96	na	na	31	na	22	na	43	na
AVERAGE AGE (IN YEARS)									
Male	15.4	13.8	14.7	15.8	15.1	15.8	16.0	17.0	17.6
Female	15.7	13.6	14.4	15.3	14.9	15.5	15.8	16.8	17.8

*Junior high school students only. †Senior high school students only.
‡Students who came to the program senior high school from the program junior high school.
§Students who came to the program senior high school from other junior high schools.

Thus, it can be seen that both artifacts of the research design and particulars of the schools must be considered in establishing appropriate groups for comparison. Analysis should be restricted only to those subgroups which can legitimately be compared.

Appendix Table 1 (page 125) shows the number of students in each sample cell, by gender, grade level and length of exposure to the program. In the control schools, the distributions remained virtually unchanged between the baseline and final survey.

In the appendix table, and in the earlier tables, grades 9a and 9b are the ninth grades of the junior high school and senior high school, respectively. Grades 10a and 10b are the 10th graders who came from the program junior high school and from all other junior high schools, respectively. In the calculation of the totals, distributions are standardized on the grade distribution of the program schools at the time of the baseline survey. The adjusted totals, similarly standardized, omit the grades exposed for only one year (grades 7 and 9b in the program schools, and grade 7 in the nonprogram school), and are used for comparisons between zero and two or more years' exposure. Mantel-Haentszel summed chi-square tests are used to calculate p values, on the basis of actual numbers by grade. We have imposed a strict significance level of $p<0.01$.

• *Figures 1 and 2.* In calculating age at first intercourse and the lag between first intercourse and clinic attendance, we used regular life-table analysis. For the program group, the analysis is restricted to the subset of female students in the program schools who were not sexually active prior to the program. This information is based upon the student's reponses to detailed questions on sexual activity and the timing of first intercourse. Age restrictions are also imposed in order to ensure comparability between samples. The comparison group, therefore, involves the experience of students of similar age, followed for a period of comparable time, who attended the program schools before the project was introduced.

• *Figure 3.* In the calculation of pregnancy rates, it seemed important to include those students who transferred to the special school for pregnant teenagers after conceiving. Because we had no information on their exact month of first intercourse, we had to make certain assumptions in order to utilize life-tables to calculate pregnancy rates. We assumed that these students had initiated sexual activity 13 months before they became pregnant, because 13 months is the average delay between first coitus and conception observed among all the pregnant students, in both the program and the nonprogram schools, for whom we had complete documentation in the baseline data. We were able to establish the month of conception among these young women by means of information on the estimated date of confinement provided by the staff of the school for pregnant teenagers.*

With this imputed information about the month of first intercourse (which we also used for the girls in the aggregate data who had a pregnancy but did not report a date of first coitus), we were able to include these girls in our calculations of pregnancy rates, which were thus made for all sexually active students in the program and the nonprogram schools, using increment-decrement life-table analysis. The estimates were controlled for length of exposure to the program, and equivalent durations (16 months, 20 months and 28 months) among students attending the program and nonprogram schools, respectively. Thus, the pregnancy experiences of young women in all of the schools were reconstructed for periods of 16, 20 and 28 months prior to the survey. The resulting life-table probabilities apply, then, to subgroups whose lengths of exposure to the program may represent quite different circumstances. For example, an exposure of 16 months' duration means that the student attended school during the initial start-up period (January 1982–June 1982), had a summer break, and completed another academic year (ending with the survey in the spring). All information on these young women comes from the third round of the survey. The 20-month exposure group attended the program schools for two full academic years, separated by a summer. The 28-month group went through the initial start-up period, two full academic years and two summers. Both sets of information for these two last groups come from the final round of the survey, carried out in the spring of 1984. Some of the pregnancies reported among the 16-month exposure group also appear among the 28-month group (taken from the third and fourth rounds of the survey, respectively), but the 20-month group remains independent of both of the other exposure groups.

With regard to the problem of school dropouts, there is no reason to believe that the proportion of dropouts who left school *because* of a pregnancy changed over time. If the total number of dropouts did not change during the program—and, specifically, the numbers in the schools' categories of dropouts in which pregnancy-related drop-outs are likely to appear—then the percentage pregnant among them should not change enough to affect our calculations. In fact, there was little variation in the numbers in these categories dropping out before, during or after the program: Numbers remained between eight and 10 in the junior high school and between 21 and 23 in the senior high school in each of the three program years. Therefore, we feel justified in omitting these young women from our calculations.

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Prepared for the Prevention Sub-Committee, Committee on Welfare Reform, by Laurie Schwab Zabin, Ph.D., Professor, Johns Hopkins School of Public Health.

In the short time we have today I'd like to address adolescent pregnancy and its relation to welfare in three ways: first by proposing four premises upon which I base my view of the issue of adolescent pregnancy - four distinctions which I believe will clarify the nature of the problem that presents itself to intervention. Second, by looking at the relationship between adolescent childbearing and poverty and at the limits of intervention based upon those premises. Finally, by suggesting briefly "what works" - after I hope we have established what "what works" can legitimately be expected to do. The suggestions we make for intervention are based on the belief that, if we are interested in helping those at risk of dependency enter the economic mainstream, individual intervention will be palliative at best; only major structural change will cure the problems the larger society has created. But, within the limits of intervention on an individual level, we do know something of what can be accomplished by improving perceived and real options for the future.

Premises for Intervention

The Two Problems of Teenage Pregnancy:

What then are these premises? First, I would suggest that there are two quite different problems of adolescent sexual activity and pregnancy in the United States today. The first is a condition that knows no geographic, social or economic boundaries. It involves sexual initiation in the mid-teens, and accidental pregnancy which generally terminates in abortion. Changes that

have occurred over the last 20 years in sexual behavior among adults have inevitably filtered down to the teenage population, and lowered the age of first intercourse for the population as a whole. We call this the sexual revolution. The other problem is quite a different phenomenon; it has become a familiar pattern only in our most disadvantaged communities. It involves sexual onset in the early pubertal or post-pubertal years, and conception during the teen years; while it also often results in abortion, it very frequently results in childbearing. This very early sexual activity, and consequent conception, often precede the ages at which young people can or do make conscious choices to parent; I would propose that this problem of adolescent pregnancy has different causes, different characteristics and more severe consequences than those same behaviors a few years later - and in different settings.

Where the family, the social institutions and the larger environment are generally protective of the adolescent and where, throughout childhood, the young person has developed a strong sense of self and of his/her present and future potential, adolescents generally have the ability to avoid behaviors that put that future at risk. But where there are few resources to protect children from risk either within the family or in the larger environment, personal characteristics protective against risk have little chance to develop - characteristics such as positive scholastic achievement and aspirations, a strong sense of self and future options, and the ability to relate to successful, proximate role models.

The peer behaviors the adolescent observes within the community have been motivated by the same needs that motivate him or her. Many of the adolescent behaviors that are seen only in negative terms by adults - because they seem to threaten a healthy transition to adulthood - actually play a positive role to the extent that they serve needs that are not otherwise served in the young person's lives. What will "work", then, must in some way seek to identify those needs and meet them.

The distinction between these two "problems" of adolescent pregnancy is not just academic; it is highly relevant to the issue of prevention in poor settings. It suggests that many of the interventions which can help older teenagers to avoid pregnancy may be insufficient, by themselves, to help those who are at risk of childbearing during their adolescent years. Improved sex education and medical services are clearly indicated for all young Americans, and may be sufficient for older teenagers in supportive environments, and in a position to seek out the services they need. Younger adolescents and teens in more dangerous environments need these services too but, for what we have described as the second problem, they will not be enough. Defining adolescent pregnancy as monolithic has tended to confuse the issues; it has placed too much emphasis on matters of moral choice and too little on the social and economic environment. Thus, it can fuel the political flames, and stand in the way of appropriate intervention.

Pregnancy versus childbearing:

The second distinction that follows from that definition is

the distinction between pregnancy and childbearing. Much of the work on adolescent pregnancy has focused on the sequelae of too-early parenting. Unfortunately, the term pregnancy is often used instead of childbearing. It is important to treat these problems separately, and to make explicit that distinction.

Why does this distinction matter to the current discussion? It raises the philosophic issue: which is truly a government's responsibility - sex, pregnancy, or childbearing? (Note the distinctions that have been reported between the US and Europe in their approaches to this issue.) But more relevant here is the question of which is, in reality, related to welfare and economic disadvantage. Clearly, the answer is childbearing. If the only way to prevent childbearing were to prevent sexual contact then initiatives to prevent sexual activity would be critical, and we would have to take on the whole sexual revolution. But that is not the case. "Just say no" is not only not enough; it may be too much! Much as we may wish that patterns of coital activity among young teens were different, it is possible to reduce the rate of unintended childbearing even in the presence of early sexual exposure. Most of the countries of Europe have done so. The focus of intervention to postpone parenthood has to include the opportunity to prevent pregnancy among the sexually active and to prevent childbearing among the pregnant. Also relevant to the prevention of dependency among those who do carry to term is the quality of care before and after delivery, again legitimate objectives for governmental attention.

Normal versus normative:

Another semantic distinction of real substantive importance is the distinction between normal and normative behavior. While coital contact may not be normative behavior in our society during the first few years post-puberty, it most certainly is biologically normal. The desire to experience sexual contact is normal, and well nigh universal once physical maturation has occurred. In most societies, out-of-wedlock pregnancy and childbearing in adolescence violate this optimal pattern, and so throughout the ages societies have tried to set themselves up so childbearing only occurs after unions are formed; in fact, societies that are most strict about that ordering often place union immediately after - or even before - puberty. As different as influences on the adolescent may be in different settings, all cultural, ethnic and economic groups in the United States - whether for moral, economic or social reasons - see a similar optimal pattern for the life course: to complete schooling, gain employment, get married, and then become a parent. That same ordering obtains whether you ask a minority mother in the poorest urban setting or the most privileged suburban parent.

Why are patterns so different in different neighborhoods, among different subgroups, if that ideal is shared? Because the strength of this ordering varies according to the perceived rewards of conforming to it and the perceived penalties of diverging from it. And those reward/sanction structures are very different. Let me emphasize that we are not speaking only of teenagers' "perceptions" but of the reality they quite rationally perceive. The cur-

rent focus on self-image and self-esteem tends to suggest that all that has to change is an adolescent's perception of his or her future; I would subscribe that it's time we admit that their perceptions are usually real; it is the reality, not self-concept alone, that has to change.

If it is normal to be sexually active, why do most American teens resist it until somewhat later in their teen years? Because for them the rewards are great enough and the sanctions strong enough to control behavior. But where future options are restricted, job opportunities minimal, the marriage market dismal and hopelessness a way of life, it is very hard to argue for the rewards of delayed sexual activity and childbearing. Similarly, where the neighborhood pattern is single parenthood and where these single families are strong enough and willing enough to provide emotional support for young mothers, it is hard to argue for sanctions. To some that may suggest that, by withdrawing all welfare support, the penalty for childbearing can be increased. That course, whose consequences would be disastrous to several generations, presupposes that the young woman consciously and rationally decides to bear a child. As we will see, that is rarely the case; most girls tell us they do not want to become mothers during their teen years. And overwhelmingly, women report that they do not want to be on welfare. So the notion that teens have babies in order to receive welfare payments - that they are seeking early childbearing and welfare as a positive way of life - would be a hard one to defend.

The fact that most Americans appear to see the same pattern as

normative suggests that it should not be impossible to help young people attain that goal. On the other hand, the fact that the biological pressures are real tells us it won't be easy.

The wantedness of pregnancy: the concept of ambivalence:

The fourth premise we need to address has to do with the wantedness of conception. Those who are punitive in their recommendations with regard to adolescent childbearing often assume that the path to parenthood is deliberately chosen. As I've indicated, the vast majority of young women tell us in national surveys that they do not - or did not - want to conceive. In fact, 87% of births to adolescents in the 1988 NSFG are reported as unintended, generally mistimed. The percent unintended or unwanted is even higher among young blacks than whites. Clearly, they are willing to choose childbearing and welfare once pregnant; to many those appear the only viable options. But there is little evidence that they see either of these outcomes as a positive good. If it were true that girls have babies because they want to get on welfare, it is unlikely that so many would tell us that they do not want to conceive. And that gives us an important clue to intervention.

While few really want to have a child, however, our recent work has highlighted the level of ambivalence they feel not only toward childbearing but also toward the interventions that can prevent it. Although 88% of our urban black sample of 17 years and younger said they did not want to conceive, when a multi-item construct was used to define wantedness more carefully, over 47% appeared ambivalent toward childbearing in adolescence. About 48%

were unequivocally negative and fewer than 5% unequivocally positive. Even more striking is the relationship between these responses and the fertility behavior of the young women in the study. One might assume that those who are ambivalent toward childbearing would fall between the other two groups in the rate at which they bear children. In fact, those who were ambivalent toward childbearing were just as likely to have a child in the subsequent two years as those who unequivocally wanted to do so. Ambivalence, then, is a characteristic shared by many of the girls in the sample that appears to have a profound effect on their fertility experience.

Ambivalence plagues attitudes toward contraception, too, and we have shown how important a role ambivalence plays in the probability that a young woman will not contracept or the likelihood she will bear a child. Our work suggested that an inner-city adolescent was between 3 and 4 times as likely to bear a child during our two-year observation period if her attitudes toward contraception and abortion and her beliefs about the efficacy of contraceptive methods were negative or ambivalent; only those with consistently positive attitudes toward those interventions were less likely to bear a child. This should be no surprise: for the sexually active, it's very difficult to avoid childbearing. Only those whose motivation to do so is strong and whose motivation to use preventive strategies is also strong can succeed. And yet, with millions being spent in the media today to convince young women they don't want to be pregnant, virtually nothing is being spent to assure them of the efficacy or safety of contraception.

Not only are the behaviors of persons surrounding the adolescent and the nature of the institutions and services available to her affected by education, economic status and social setting, but these factors also have an impact on childbearing through their effects on the motivation to avoid it. That implies that there are, indeed, choices - not necessarily that a young woman with certain characteristics "chooses" to have a child but that at some level she makes the behavioral decisions that lead her to have one. Her setting has a powerful effect on what those decisions will be. If the calculus of choice that precedes sexual onset, contraception, and childbearing is an important link between poverty and childbearing, it is also a powerful place to intervene.

The limits of intervention:

There is good evidence that single, early parenthood is associated with lowered income levels compared with motherhood, even single motherhood, in the twenties. The link to welfare has been demonstrated, although the degree to which such welfare status **predated** the birth of a child to an adolescent is not clear. Our work with a small inner city black sample suggests that when economic dependency in the years following such a birth is measured by the proportion of working adults in the household, a baby does make a difference; when measured by welfare alone, and when welfare predated the child, it does not. These relationships need more attention, but clearly the baby does affect the likelihood that the young mother can go to work and/or continue her education. It therefore must have an effect not only on her and her child but on

the economic wellbeing of the primary family with which she resides.

The four premises outlined above amplify what economists tell us about the relationship of poverty and childbearing, and suggest the dimensions that would be required if interventions are really to break that link:

* That current family structures, distributed in pockets of disadvantage, are often strong functional units meeting real and present needs. They will change only if structural changes in the environment alter young people's picture of what a family might, realistically, be. Individual interventions to postpone adolescent childbearing should not be expected, by themselves, to change those patterns - even if they "work" on the fundamental level of postponing sexual onset and childbearing.
* That initiatives must go well beyond medical services and sex education if they are to have an effect on childbearing; they have to have an impact on the young person's opportunity structure - present and future, real and perceived.
* That initiatives need to be powerful to overcome the normal instincts of young people in close, unsupervised proximity.
* That there is, however, a normative structure for interventions to build on: most young women do not want to bear children during their school years.
* That those interventions have to address and to strengthen both the motivation to avoid childbearing and the motivation

to use positive means to avoid it; one without the other will not serve the purpose.

But let's be clear about what intervention can do: intervention to delay single childbearing until older ages will probably have some effect on economic dependency but will not take away the additional effects of single parenthood. Basic changes in family structure that depend on labor force participation of males and females, on tax law and welfare law and the state of our most disadvantaged neighborhoods will not result from the kinds of interventions we describe however successful they may be. Until young women see men in productive jobs with the potential of playing supportive roles - economically and emotionally - they will continue to see the women they trust - mothers, sisters, aunts - as the appropriate partners with whom to raise a child. Similarly, however strong and supportive the primary family may be, until young women can enter productive careers they will not achieve lasting economic independence.

Although in the long run, then, I believe that young people's motivation to avoid pregnancy can be affected more by societal change than clinical intervention, the levels of ambivalence they report, at the very least, give us something to work with in the meantime. The very ambivalence that puts them at risk gives us the opportunity we need to intervene. If pregnancies are rarely filling a felt need to the extent that the young women feel strongly positive about them, perhaps their weak motivation to avoid childbearing can be strengthened through intervention. Furthermore, if

so many pregnancies are only weakly supported by the young women themselves, there is legitimate reason to intervene - legitimate because in doing we are responding to the young women themselves, not just to a societal imperative imposed upon them. It makes much less germane to intervention the academic discussion of the consequences of teenage pregnancy: whether the outcomes we observe derive from the environment or the baby, whether they precede or follow the pregnancy, **if the young women are not committed to parenthood, they deserve our support in helping them postpone it.**

The Self Center Intervention:

I was asked to describe one very brief but successful intervention undertaken in the 1980's by the Johns Hopkins School of Medicine and the Baltimore School System. In doing so, I'll try to draw some conclusions about what made it work - having now set severe limitations on what we mean by "working". Based on our perception that intervention to postpone a first birth had to occur early in or before sexual exposure and early in chronological age, a program was designed to provide education, counseling and medical services to a junior and a senior high school. Control schools were designated which were available for the evaluation but received no special services. The design of the services was as follows: A social worker was assigned to each of two schools, available to students every morning for class lectures, and for small group and individual education. A nurse midwife or nurse practitioner was also frequently available within the school setting but no medical services were available there. From one or two

o'clock on, a clinic was open across the street from one school and a few blocks from the other with the same two teams on hand to continue the guidance process and to deliver reproductive health care to the students of the two schools. Males and females could present for group or individual sessions similar to those in the school health suite, but they could also receive contraception, diagnosis and treatment of sexually transmitted disease, pregnancy tests, referral for prenatal care and abortion and other medical or mental health referrals. All services were free. The waiting room was a hospitable site for discussions, videos and other educational activities. Equally welcome were boys and girls who were and were not sexually active. A climate was created both in the school and in the clinic in which the open discussion of issues of personal concern was acceptable and encouraged. The staff focused on interactive guidance; they sought to help the students understand the impact of today's behavior on tomorrow's course, and thus to change the calculus of choice on the basis of which the young people made their present behavioral decisions.

A rigorous process evaluation produced information on the exact level of utilization and the cost of each component of the program. These data showed that the staff did operate as a bridge between the school and clinic sites. At younger (junior high) ages, males were just as likely to utilize both school and clinic components as females; that was no longer true in senior high, although most students were in contact with at least some components of the program. Small group sessions were particularly

popular; coalescing informally around issues or groups of friends, or organized by the students or the staff, 3-6 young people would meet with the counselor for 15-30 minutes. These very popular and cost-effective sessions would meet the students' needs for support from their peers at the same time that they offered more confidentiality than a classroom discussion. They were useful both in the school and the clinic, and contributed to the open atmosphere that was created for discussion of formerly taboo subjects. Individual consultation with the medical or social work staff was also available; it could be very costly to the program because of the long periods of time or the frequent sessions it required.

A series of four school-wide surveys provided the data for an evaluation of program effects. These effects included a highly significant increase in contraceptive use, and a reduction in the period of delay between sexual onset and clinic attendance. There was a demonstrable postponement in the age of sexual onset and reduction in pregnancy rates; this reduction was observed in both abortion and childbearing rates, with the former declining before the latter as would be expected. Whereas the sharp increases in childbearing observed citywide led to an increase at the control schools of approximately 58%, there was a decline of 30% in the program schools; thus, whereas the schools had begun with rather similar rates, they ended the three year observation period with a difference of almost 90 percentage points.

What works? and why?

Why did this intervention work as well as it did, and what can

we learn from it? First, it is important to understand that the entire program lasted only three years (it was privately funded for that period) and the evaluation lasted only until the end of the program period; we have no way of knowing whether its effects endured. But they appeared to be dramatic while the program was in place. The program clearly changed the atmosphere in the schools, opening discussion of personal areas of concern and making it acceptable to talk and act responsibly. I would suggest that the model combined two characteristics that are usually seen as contradictory: it was highly and explicitly focused on reproductive health, but it was comprehensive in the range of its counseling and the depth of the guidance it provided. I believe the evidence suggests that an explicit, honest focus on reproductive and sexual issues in the context of a broadly supportive program to maximize human potential is a combination that holds promise - more promise than either narrow categorical interventions at one extreme, or at the other, comprehensive programs that assume, tacitly, that a change in future options will automatically change sexual and fertility decisions.

When we ask what works we are asking what can break a cycle that starts and ends with poverty, rarely one that causes poverty where it did not exist before. In this context, several "life options" models have shown temporary success that tends to attenuate with time. However powerful the individual impact of intervention, the adolescent is returned to a family or community system that has not changed. If the connection between the environment of

poverty and too early childbearing is demonstrable, and I believe it is, we have to think in terms of multi-generational intervention. When a generation is compressed into 15 years, a child in a Head Start program can be only 10 years away from parenthood; to withdraw support from that child or to wait until he or she reaches puberty to intervene is clearly self-defeating. The 15 year old mother's educational and employment career will have potent effects not only on her present child but on her future fertility and, in very few years, on the likelihood that her child will follow suit. Similarly, the adolescent parent is often relying on the support of her mother whose economic status, work status and ability herself to parent can have powerful effects on her other children as well as on the future of the adolescent mother and her child. Despite the recognition accorded to the cyclical nature of poverty, I have seen extraordinarily little intervention that uses an intergenerational model - which may explain why the effects of so many interventions are dissipated in a few years time.

Similarly, little serious intervention has been focused on males. The assumption that they do not wish to be involved as responsible partners or fathers is not supported by those who have worked with them, or even by the reports of many of the young women themselves. And little is centered in the community instead of the school. The family support center model is appealing for its ability to reach the entire family, its interaction with the community, its intergenerational components and above all because it doesn't try to compress the support it offers into a time-limited

"program"; ideally, it remains available to families as long as it is needed, and can do remarkable things to help them get and stay on a productive course. There has not been the level of evaluation of these models that can give us the evidence we need, but they make sense and they appear to work.

What, then, are some of the characteristics of successful interventions? They are interactive, not merely didactic. While they may or may not provide education in a classroom setting, they allow for group and individual guidance. Hopefully, they reach young people in time to strengthen their attachment to school and in time to help them avoid a first pregnancy. They listen. They build on the strengths of the young people and the families they serve. They are caring, responsive and empowering. They provide support over a long enough period and with a consistent enough staff so that trust can be developed and maintained. They are cognizant of and adapted to the developmental, cognitive and emotional stages of their client population. They are close to where young people are or congregate. Even if they are conveniently located, they find ways to provide a psychological bridge to or between services (outreach, shared staff, supportive referral, etc.). They are cost-free. They - or some of their critical components - are confidential. They are culturally sensitive and acceptable to the community.

What kinds of services do they render? They help young people define their goals and their vision for the future, and help them make appropriate connections between their actions today and their

aspirations. They provide a range of services to meet current reproductive health needs, including contraceptive and other reproductive health services, abortion, prenatal and postnatal care or, if they do not provide them, at least legitimate them and facilitate the young person's access in each of these areas. When dealing with young mothers, they provide parenting education and day care opportunities. They provide services - educational or job related - that increase the young women's - and the young men's - ability to provide for their own futures, or at the very least, motivate and assist the young people to access such services. They do not exclude young men but give them opportunities to learn, to participate and to be responsible partners. And ideally, they have some impact on the family and/or community (neighborhood, school, etc.) within which individual adolescents must make their way.

There is good evidence, then, that if objectives are defined within reasonable limits, some interventions can work. Although childhood is a better time to intervene, adolescence is not too late. The Head Start program showed that the academic effects of birth status and economic setting can be ameliorated by early intervention. But there is good and growing evidence that an improvement in life circumstances at any time during a child's young life can change important aspects of his or her development. Even preventing a second unintended conception to a teenage mother can help minimize the stresses on several generations - the young mother, her child and her primary family. The potential for intervention is, therefore, great.

There is a danger that, by asserting the power of individual programs, independently, to make measureable differences in young people's lives, one is relieving the larger society of the responsibility for fundamental, structural change. We think not. There is too much to be done. The range of categorical services adolescents require are suggested above. But beyond those services are the desperate and multiple needs of young people without education or jobs, or the resources they need to acquire them. We've heard too much in the last few years about the immorality of teen pregnancy; it's time now to address the more fundamental immorality of a society that lets so many of its young people grow up devoid of hope.

EMPOWERMENT ZONES AND ENTERPRISE COMMUNITIES
Details of Budget Reconciliation Provisions

A. Competitive Designation Process

- **Designating Secretaries:** The Secretary of HUD will designate the urban zones and the Secretary of Agriculture will designate the rural zones. All designations will occur in 1994 and 1995. (The Act does not provide for the creation of an Enterprise Board, however, the Administration will may establish the Board and promulgate rules regarding the selection and revocation processes.)

- **Comprehensive Strategic Plan:** Applicants must meet the eligibility criteria and submit a comprehensive strategic plan for coordinated economic, human, community and physical development for the proposed nominated area. The plan must describe, among other things, the plan for coordinated development; the process by which the affected community was a full partner in developing the plan; the amount of State, local and private resources that will be made available in the nominated area; and the baseline, methods of evaluation, and benchmarks for measuring success in carrying out the plan. No designation can occur unless the nominating government(s) provide written assurances that the strategic plan will be implemented.

- **Revocation of Designation:** The Act delegates to the Designating Secretary the task of promulgating regulations outlining the revocation process. However, the Conference Report states that it expects that a designation will be revoked only after a hearing on the record and that no replacement designations will occur upon revocation of a designation.

B. Number of Designated Areas (Zones)

Empowerment Zones:

- 9 zones with 6 urban (and a total resident population at the time of designation of 750,000 or less), 3 rural. (The reconciliation bill also provides separate tax incentives for businesses operating in Indian reservations, as described below.)

- Of the 6 urban zones, at least one must be in a city with a population of 500,000 or less and at least one of the zones itself must have a population of 50,000 or less and include areas located in two states.

- All may be designated as early as 1994 but no later than 1996. Designation runs for 10 years, subject to early termination for failure to substantially comply with or achieve terms and benchmarks included in the community's

strategic plan.

Enterprise Communities:

- 95 zones (65 urban, 30 rural). (Again, Indian reservations addressed separately below.)

- All may be designated as early as 1994 but no later than 1996. Designation runs for 10 years, subject to early termination for failure to substantially comply with or achieve terms and benchmarks included in the community's strategic plan.

C. Eligibility Criteria

1. Geographic and Population Restrictions

- Urban zones can consist of up to 3 noncontiguous areas in 2 or fewer states.

- Rural zones can consist of up to
  - 3 noncontiguous areas if located in 1 state, or
  - 1 contiguous area if located in up to 3 states.

- Size limits:
  - 20 square miles for urban zones.
  - 1,000 square miles for rural zones.

- Maximum population:
  - For cities with populations of 500,000 or above, the lesser of 200,000 residents or 10 percent of city population.
  - For cities with populations less than 500,000, zones can have a maximum population of 50,000 residents.
  - For rural areas up to 30,000 residents.

2. Poverty Rates:

Generally, within each zone,

- 50 percent of census tracts must have a poverty rate of 35 percent or more,
- 90 percent of census tracts must have a poverty rate of 25 percent or more, and
- 100 percent of census tracts must have a poverty rate of 20 percent or more.

Subject to the following exceptions —

- The Designating Secretary has no discretion to reduce poverty criteria applicable to empowerment zones. With respect to enterprise communities, the Designating Secretary may reduce one of the poverty criteria by five percentage points for not more than 10 percent of the population census tracts (up to a maximum of five population census tracts), or, in the alternative, may reduce the 35-percent poverty threshold to 25-percent for up to three population census tracts.

- There is also a special exception for census tracts having either (i) no population, or (ii) population less than 2,000 residents where more than 75 percent of the tract is zoned for commercial or industrial use.

- Central business districts can be included in zones but any tract including part of the central business district must have a poverty rate of 35 percent or more.

D. **Investments Under the Budget Reconciliation Act** -- Approximately $2.5 billion in new tax incentives and $1 billion in capped entitlement expenditures. (Additional monies will be available for empowerment zones and enterprise communities through new authorizations under the Economic Empowerment Act of 1993 and through diversion of funds from existing agency programs.)

E. **Capped Entitlement Spending under the Budget Reconciliation**

- $1 billion available under Title XX for grants to States for social services spending in empowerment zones and enterprise communities designated by the Designating Secretaries.

- Grants in the following amounts will be available to states for each designated zone:

  -- urban empowerment zone: two consecutive yearly grants of $50 million
  -- rural empowerment zone: two consecutive yearly grants of $20 million
  -- urban and rural enterprise communities: one grant of $2.95 million

- The grant funds must be used in accordance with the zone's comprehensive strategic plan and on activities that benefit zone residents.

- Program options for use of these funds include: drug and alcohol prevention and treatment programs that offer services to pregnant women, mothers and children; training and employing disadvantaged adults and youth in construction and rehabilitation of affordable housing, public infrastructure and

community facilities; training in entrepreneurism and self-employment; after-school programs designed to promote and protect families and children; services designed to promote community and economic development, such as skills training, job counseling, transportation services, housing, counseling, financial management and business counseling; emergency shelter for disadvantaged families; programs that promote home ownership, education or other routes to economic independence for low income families and individuals.

- Each state is required to remit to the Secretary of HHS any amount of the grants that are not obligated within two years of payment. Remitted amounts will be made available to states under the basic title XX plan.

F. Tax Incentives for Empowerment Zones and Enterprise Communities

Tax-exempt enterprise zone facility bonds for zone businesses

- New category of exempt activity bonds created for loans to qualified zone businesses located in zones.

- Up to $3 million per business per zone in bond funding and $20 million per business for all zones.

- These bonds are exempt from general restrictions on financing the acquisition of existing property and on financing land with 25 percent or more of the net proceeds of a bond issue, the bonds are subject to the State private activity bond volume cap.

G. Tax Incentives Available only for Empowerment Zones

1. Employment and Training Credit

- From the time of designation through the year 2001, employer credit of 20 percent of the first $15,000 of wages or certain training expenses for employees who are zone residents and perform substantially all services in the zone. The maximum credit per qualified employee is $3000 per year.

- Credit will be phased out beginning in 2002.

  - From 1994 through 2001, the credit is 20 percent
  - in 2002, the credit is 15 percent
  - in 2003, the credit is 10 percent
  - in 2004, the credit is 5 percent

- The credit is allowable to offset up to 25 percent of alternative minimum tax liability.

- Qualified wages include certain training and educational expenses paid on behalf of the employee.

2. Property expensing

- Section 179 expensing for depreciable property for qualified zone businesses is increased by the lesser of (1) $20,000 or (2) the cost of section 179 property that is qualified zone property and that is placed in service during the taxable year. (This increase is in addition to the $17,500 in 179 expensing now available to all small businesses.)

- This increased expensing does not apply to buildings.

- The present-law phase-out range is expanded from $217,500 to $257,500. The cost of section 179 property that is not qualified zone property is not reduced.

- The increased expensing allowance does apply for purposes of the alternative minimum tax (i.e., it is not treated as an adjustment for purposes of the AMT).

- Among other requirements to ensure close ties to the zone, qualified zone businesses must have at least 35 percent of employees who are zone residents, and do not include certain types of businesses.

H. Tax Credit for Contributions to Certain Community Development Corporations (not limited to Zones)

- A taxpayer will receive a credit for qualified cash contributions made to certain CDCs. The credit may be claimed for each taxable year during the 10-year period following the making of the contribution. The credit claimed for each year can equal 5% of the total contribution, for a total of a 50% credit over the 10-year period.

- The aggregate amount of contribution may not exceed $2,000,000.

- The Secretary of HUD may select up to 20 CDCs eligible to participate in the program, at least eight of which must operate in rural areas. Selected CDCs must: be tax-exempt, 501(c)(3) organizations; have a principal purposes of promoting employment and business opportunities for residents of its target area; have a target area which meets geographic limitations for empowerment zones and enterprise communities and meets certain indicia of distress.

- The Secretary shall give priority to CDCs with a demonstrated record of performance in administering community development programs which target at least 75% of created jobs to low-income or unemployed individuals.

I. Incentives for Investments in SSBICs (not limited to Zones)

- Waives active business requirement for Specialized Small Business Investment Corporations (SSBICs) that would otherwise not be eligible as a qualified small business for the new 50% capital gains exclusion on investments in small businesses.

- Allows deferral of gain by corporate or individual investors from the sale of publicly-traded securities if the proceeds are reinvested in the equity of a SSBIC.

J. Expanded Low Income Housing Credit (not limited to Zones)

- Property developed using HOME funds would be eligible for the credit if 40% or more of the residents have incomes no greater than 50% of the area median income.

K. Tax Incentives for businesses on Indian Reservations

1. Accelerated Depreciation

- Allows shorter recovery periods for section 168 depreciation of investment in certain "qualified Indian reservation property."

  - 3-year property depreciated over 2 years.
  - 5-year property depreciated over 3 years.
  - 7-year property depreciated over 4 years.
  - 10-year property depreciated over 6 years.
  - 15-year property depreciated over 9 years.
  - 20-year property depreciated over 12 years.
  - Non-residential real property depreciated over 22 years.

2. Indian Employment Credit

- A 20% credit is available to employers for the first $20,000 of qualified wages and qualified employee health insurance costs paid to each qualified employee.

- The credit is an incremental credit, such that an employer's current-year qualified wages and qualified employee health insurance costs are eligible for the credit only to the extent that the sum of such costs exceeds the sum of

comparable costs paid during 1993 to employees whose wages did not exceed $30,000.