

DOUGLAS KIRBY, PH.D.

NOVEMBER, 2007

SUMMARY

Emerging Answers 2007

Research Findings on Programs
to Reduce Teen Pregnancy and
Sexually Transmitted Diseases



The National Campaign
to Prevent Teen and Unplanned Pregnancy

National Campaign to Prevent Teen and Unplanned Pregnancy

BOARD OF DIRECTORS

Chairman

The Hon. Thomas H. Kean
Chairman, The Robert Wood
Johnson Foundation
CEO, THK Consulting

President

Isabel V. Sawhill, Ph.D.
Senior Fellow, Economic Studies
The Brookings Institution

CEO

Sarah Brown

Ms. Daisy Expósito-Ulla
Chairman and CEO
d expósito & partners

William Galston, Ph.D.
Senior Fellow,
Governance Studies
The Brookings Institution

Mr. David R. Gergen
Editor-at-Large
U.S. News & World Report

Ron Haskins, Ph.D.
Senior Fellow, Economic Studies
Co-Director
Center for Children and Families
The Brookings Institution

Ms. Alexine Jackson
Community Volunteer

The Hon. Nancy L. Johnson
Senior Public Policy Advisor
Federal Public Policy and
Healthcare Group
Baker, Donelson, Bearman,
Caldwell & Berkowitz, PC

Ms. Jody Greenstone Miller
President and CEO
The Business Talent Group

Fr. Michael D. Place, STD
Vice President, Ministry
Development
Resurrection Health Care

Mr. Bruce Rosenblum
President
Warner Bros. Television Group

Mr. Stephen W. Sanger
Chairman and Chief Executive
Officer
General Mills, Inc.

Mrs. Victoria P. Sant
President
The Summit Foundation

Sara Seims, Ph.D.
Director, Population Program
The William and Flora Hewlett
Foundation

Matthew Stagner, Ph.D.
Executive Director
Chapin Hall Center for Children
University of Chicago

Ms. Mary C. Tydings
Managing Director
Russell Reynolds Associates

Mr. Roland C. Warren
President
National Fatherhood Initiative

The Hon. Vincent Weber
Partner
Clark & Weinstock

Mr. Stephen A. Weiswasser
Partner
Covington & Burling

Gail R. Wilensky, Ph.D.
Senior Fellow
Project HOPE

Kimberlydawn Wisdom, M.D.
Surgeon General, State of
Michigan
Vice President, Community
Health, Education, and
Wellness, Henry Ford
Health System

**Robert Wm. Blum, M.D.,
M.P.H, Ph.D.**
William H. Gates Sr,
Professor and Chair
Johns Hopkins Bloomberg
School of Public Health
Department of Population &
Family Health Sciences

Ms. Linda Chavez
Chairman
The Center for Equal
Opportunity

**Vanessa Cullins, M.D., M.P.H.,
M.B.A.**
Vice President for
Medical Affairs
Planned Parenthood Federation
of America

Ms. Susanne Daniels
President
Lifetime Entertainment Services
Lifetime Television

Ms. Maria Echaveste
Co-Founder
Nueva Vista Group, LLC

DOUGLAS KIRBY, PH.D.

NOVEMBER, 2007

With Important contributions from B.A. Laris, MPH

SUMMARY

Emerging Answers 2007

**Research Findings on Programs
to Reduce Teen Pregnancy and
Sexually Transmitted Diseases**





ACKNOWLEDGMENTS

The National Campaign warmly recognizes the William and Flora Hewlett Foundation for their generous support of the National Campaign's efforts from the very beginning and for making it possible for the National Campaign to expand its mission. With the Foundation's assistance, we will continue to press for further reductions in teen pregnancy and will now also help young adults prevent pregnancies that are neither wanted nor welcomed.

Emerging Answers 2007 is part of the National Campaign's "Putting What Works to Work" (PWWTW) project, an effort to publish and disseminate the latest research on teen pregnancy in straightforward, easy-to-understand language and provide clear implications for policy, programs, and parents. PWWTW is funded by the Centers for Disease Control and Prevention (CDC) and is supported by grant number U88/CCU322139-01. Materials developed as part of this project are solely the responsibility of the authors and do not necessarily represent the official views of CDC. The National Campaign wishes to thank the CDC for making *Emerging Answers 2007* possible and for their support of this portion of the National Campaign's research program.

The National Campaign also wishes to thank Blair Potter Burns for her contributions to this volume. Her steady and skilled editing has improved this volume in countless ways. We also thank the Effective Programs and Research Task Force and other individuals for their careful review of this document and helpful suggestions.

Last but certainly not least, we offer special thanks and recognition to author Doug Kirby, Ph.D. When it comes to helping understand what programs work best to prevent teen pregnancy, his contributions are unmatched. We thank him for his scholarship, commitment, fairness, and abiding patience in seeing this project through.

Author's Acknowledgments

In addition to the people noted above in the Campaign's acknowledgments, especially Blair Potter Burns, the author would like to thank several people. B.A. Laris made particularly important contributions to this report. She read all 115 studies measuring the impact of programs, summarized each of them, sent the summaries to the original authors for verification, coded each of the studies, reconciled any differences in coding with the author of this report, created SPSS files for the studies, and generated most of the tables for this report.

The author would like to express a great deal of appreciation to Bill Albert for his continual encouragement, his good humor, his willingness to let the author keep adding the latest studies in the field even as deadlines passed, his constructive ideas for layout, and the innumerable activities he orchestrated and completed himself to put this all together. Many thanks to Katherine Suellentrop, also at the Campaign, for finding and checking many updated statistics on teen sexual activity, pregnancy and STD rates. Several members of the Campaign's Effective Programs and Research Task Force made important contributions. For example, Rebecca Maynard raised excellent methodological concerns which led to a much stronger analysis of the strength of the evidence and Brent Miller suggested many improvements to this report. And finally very strong thanks to Forrest Alton of the South Carolina Campaign to Prevent Teen Pregnancy and both Lori Rolleri and Karin Coyle at ETR Associates for reading different versions of this volume and making many helpful suggestions about topics to include, and methods of expressing results clearly, completely and in a balanced manner.

©Copyright 2007 by the National Campaign to Prevent Teen and Unplanned Pregnancy. All rights reserved.

ISBN: 1-58671-070-2

Suggested citation: Kirby, D. (2007). *Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Diseases*. Washington, DC: National Campaign to Prevent Teen and Unplanned Pregnancy

Design: Nancy Bratton Design
www.nancybrattondesign.com



EFFECTIVE PROGRAMS AND RESEARCH TASK FORCE

(This document was reviewed by the task force as configured in early 2007.)

Chair

Brent Miller, Ph.D.

Vice President for Research
Utah State University

William Marsiglio, Ph.D.

Professor, Department of Sociology
University of Florida

Rebecca A. Maynard, Ph.D.

University Trustee Chair Professor
University of Pennsylvania

Members

Kathryn Edin, Ph.D.

Associate Professor of Sociology
University of Pennsylvania

Saul D. Hoffman, Ph.D.

Professor, Department of Economics
University of Delaware

Jim Jaccard, Ph.D.

Professor, Department of Psychology
Florida International University

Melissa S. Kearney, Ph.D.

Assistant Professor of Economics
Department of Economics
University of Maryland

Daniel T. Lichter, Ph.D.

Professor, Department of Policy Analysis
& Management
Cornell University

Anne Meier, Ph.D.

Assistant Professor, Department of Sociology
University of Minnesota

Susan Philliber, Ph.D.

Senior Partner
Philliber Research Associates

John Santelli, M.D., M.P.H.

Heilbrunn Department of Population
and Family Health
Mailman School of Public Health
Columbia University

Matthew Stagner, Ph.D.

Executive Director
Chapin Hall Center for Children

Stan Weed, Ph.D.

Director
Institute for Research & Evaluation

FOREWORD

The United States has made extraordinary progress in reducing teen pregnancy and birth rates. More teens are delaying sex and those that are sexually active are using contraception more consistently and carefully. Both of these developments have made important contributions to the impressive decline in teen pregnancy and child-bearing.

Recent years have also brought good news on the research front. As Doug Kirby so carefully points out in *Emerging Answers 2007*, the quality and quantity of evaluation research in this field has improved dramatically and there is now more persuasive evidence than ever before that a limited number of programs can delay sexual activity, improve contraceptive use among sexually active teens, and/or prevent teen pregnancy. Of course, this is a very welcome development for all of us who care about the well-being of young people and the next generation of children who deserve to be raised by adult parents.

Over the years, the National Campaign has produced and disseminated a number of detailed reports and publications on such topics as parental influence, the role of peers, media influence, and the costs of teen pregnancy. Still, the question we are asked most frequently is: what *programs* work to prevent teen pregnancy? In *Emerging Answers 2007*—an update of *Emerging Answers* (2001) and *No Easy Answers* (1997)—Dr. Kirby provides some answers to the important question of “what works.” We are confident that this review will be as popular and influential as its predecessors.

The National Campaign would like to thank Dr. Kirby for his scholarship and for producing this thorough research review. In particular, we recognize his dogged commitment to being fair and evenhanded in his assessment of the research. In the interest of full disclosure, it should be noted that Dr. Kirby, who is a Senior Research Scientist at ETR Associates, has a well-deserved reputation as a high-quality evaluation researcher. Consequently and not surprisingly, a number of Dr. Kirby’s own studies of programs appear in this publication. In addition, Dr. Kirby thought it important to also note that ETR Associates developed and continues to market several of the curricula reviewed in *Emerging Answers 2007*.

Having accurate, research-based information on what works to prevent teen pregnancy is critically important information for communities and practitioners trying to make informed decisions about preventing teen pregnancy. Even so—because teen pregnancy has many causes, and because even effective programs do not eliminate the problem—it is unreasonable to expect any single curriculum or community program to make a serious dent in the problem of teen pregnancy on its own. Making true and lasting progress in preventing teen pregnancy requires a combination of community programs and broader efforts to influence values and popular culture, to engage parents and schools, to change the economic incentives that face teens, and more. Another reason why it is unfair to place the entire responsibility for solving the problem of teen pregnancy on the back of community efforts is that many of these programs—even those deemed effective—often have only modest results, many are fragile and poorly-funded, and

most of these programs serve only a fraction of all the kids in the area who are at risk.

Readers of this review should also consider that even though a program may have been shown to be effective in changing behavior, it is important to think carefully about what an effective program actually can accomplish. Some things to consider:

- ☆ How do *you* define effective? For example, is a program effective if its good results last only a relatively brief amount of time or only among boys? In other words, pay careful attention to the specific results of program evaluation and think carefully about what constitutes success. Is a 10 percent improvement enough? What if a program helps on one issue but makes another issue worse?
- ☆ Consider the magnitude of success. For example, if a program is successful at delaying first sex among participants, how *long* was the average delay? An effective program may only change things a bit.
- ☆ Keep in mind that there may very well be a number of creative programs that are effective in helping young people avoid risky sexual behavior that simply have not yet been evaluated.

As we said in this space in 2001, in the final analysis, professionals working with youth should not adopt simplistic solutions with little chance of making a dent on the complex problem of teen pregnancy. Instead, all should be encouraged by both the impressive declines in teen pregnancy and the growing amount of research showing that some programs can make a difference. Those programs with the best evidence for success should be replicated, new efforts should be built on the common elements of successful programs, and more effort should be given to exploring, developing, and evaluating new and innovative approaches to preventing too-early pregnancy and parenthood.

Sarah S. Brown
CEO
National Campaign to Prevent
Teen and Unplanned Pregnancy

October 2007



AUTHOR'S PREFACE

In 1997, I wrote *No Easy Answers: Research Findings on Programs to Reduce Teen Pregnancy* for the National Campaign to Prevent Teen Pregnancy. At that time, with only a few exceptions, most studies assessing the impact of programs to reduce sexual risk-taking by teens failed either to measure or to find sustained, long-term effects on behavior. Of the few studies that appeared to have more than a short-term impact, none had been evaluated two or more times by independent researchers and found to be effective. In general, the research indicated that there were “no easy answers” to markedly reducing teen pregnancy in the United States.

Four years later, I updated the review and wrote *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy*. Those findings were definitely more positive. Larger, more rigorous studies of some sex and STD/HIV education programs had found sustained positive effects on behavior for as long as three years, and one program that combined both sexuality education and youth development (i.e., the *Children's Aid Society-Carrera Program*) reduced pregnancy rates for three years. In addition, both service learning programs (i.e., voluntary community service with group discussions and reflection) and at least one sex and HIV education program (*Reducing the Risk*) had been found to reduce sexual risk-taking or pregnancy in several settings by independent research teams. Finally, there was emerging evidence that some shorter, more modest clinic interventions involving educational materials coupled with one-on-one counseling could increase the use of contraceptives. All of these findings were encouraging.

It is now six years since I wrote *Emerging Answers*, and the number of studies measuring program impact on adolescent sexual behavior has increased by fifty percent. Thus, I am once again updating my review.

Just as the results summarized in *Emerging Answers* were more positive than those in *No Easy Answers*, these new results are more positive than those summarized in *Emerging Answers*. Our field continues to progress. The percentage of sex and STD/HIV education programs with positive effects on behavior continues to increase and the strength of their evidence has also increased. Moreover, there are now several programs that have been evaluated multiple times, and the results suggest that when the original programs are implemented with fidelity in similar settings with similar populations of young people, their positive effects on behavior are also replicated. The common characteristics of effective programs have been expanded to include their development, content, and implementation, and there is greater evidence supporting those characteristics. We also know more about which mediating factors (e.g., knowledge, attitudes, perceptions of peer norms, self-efficacy, intentions, etc.) are changed by the programs and in turn affect behavior. In addition, there is good evidence that interactive video-based and computer-based interventions can be effective and that providing emergency contraception to girls and young women in advance of having sex can increase the use of that emergency contraception. Finally, there is increasing evidence that programs for parents of adolescents can lead to greater parent-teen communication about sexual behavior and to actual changes in adolescent sexual behavior,

especially if the adolescents are also involved in the programs.

Despite these encouraging results, getting young people to delay having sex or to use protection against pregnancy and STD remains a challenge. There are many factors in young people's lives that affect their sexual behavior, for example, their own sexual drive and desire for intimacy, their family's values, their friends' values and behavior, their own attitudes and skills, the media, the monitoring of young people by their community, and opportunities for the future in their community. Most, but not all, of the programs designed to reduce risky sexual behavior are very modest. Thus, when they strive to partially overcome some or all of these other factors, and thereby to change adolescent sexual behavior, they do face a daunting task.

Consequently, none of these programs is a complete solution. Typically, the more effective programs may reduce one or more types of risky behavior by roughly one-third. Just as people can view a glass of water as being two-thirds empty or one-third full, so they should recognize that none of these programs comes close to eliminating sexual risk-taking—and that roughly two-thirds of that behavior may continue to occur. However, given the modest nature of most of these programs, if some of them can reduce risky sexual behavior by roughly one-third, they could have a programmatically meaningful impact on pregnancy and STD rates and should be implemented far more broadly.

Given all of the results from all of the studies, a technically accurate title for this review might have been "Multiple Partial Answers." However, that is not a very catchy title. Furthermore, answers are still emerging and will continue to emerge for years to come, and in many ways this review builds on the research criteria, the organization, and the content of *Emerging Answers*. Accordingly, it is called *Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Disease*.

While most of this review focuses on the effects of programs designed to change risky sexual behavior, it is also true that in recent years, we have learned more about the behavior that affects the transmission of STDs and the risk and protective factors that affect that behavior. Accordingly, this review includes an entirely new chapter on behavior affecting pregnancy and STD transmission.

I hope this review is helpful to your planning and implementation of effective programs.

Douglas Kirby, Ph.D.
September 2007





Summary

In the six years since The National Campaign to Prevent Teen Pregnancy published *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy*, the number of studies measuring program impact has increased by 50 percent, their methodological rigor has improved substantially, and additional studies on the behavior that affects teen pregnancy and sexually transmitted disease (STD) as well as the factors affecting that behavior have been published. These developments are heartening because they give a clearer picture of which programs are effective and why. *Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Disease* summarizes all of this research.

Other heartening developments are the continuing declines in teen pregnancy and birth rates, which have now dropped by about one-third since the early 1990s. While many factors undoubtedly contributed to these declines, part of the credit goes to the many, varied pregnancy and STD/HIV prevention programs designed and implemented by dedicated reproductive health and youth development professionals in concert with service agencies, community leaders, teachers, parents, and religious leaders. Even more important, of course, are teenagers' responses to these efforts: slightly larger percentages of teens are delaying having sexual intercourse, and greater percentages of teens are using condoms and other forms of contraception if they do have sex.

Despite this good news, pregnancy and birth rates among U.S. teens remain very high, both relative to other developed countries and in

terms of the costs to the teens involved, their children, and society at large. Rates of many reported STDs are also high among U.S. teens.

This review summarizes research results on sexual risk behavior and its consequences. It identifies the particular types of adolescent sexual risk-taking behavior that affect pregnancy and STDs. It provides an overview of important factors that influence such sexual risk-taking. The report goes on to describe the programs and approaches that have reduced teen sexual risk-taking and teen pregnancy or STD. It expands the list of programs with strong evidence of impact, describes the characteristics of effective sex and STD/HIV education programs contributing to their success and provides new evidence for other promising approaches to reducing sexual risk. Finally, *Emerging Answers 2007* describes promising strategies for organizations and communities that want to select, adapt, design or implement prevention programs for their own teens.

This review is not all-encompassing, however. It examines only primary prevention programs: it does not include programs to prevent second pregnancies and births to teenage mothers, although some strategies for avoiding first pregnancies and births apply to later ones as well. Moreover, it does not assess the efficacy of various methods of contraception, and it does not consider same-sex aspects of preventing STDs, including HIV.

PREVALENCE AND CONSEQUENCES OF SEXUAL RISK-TAKING

When teens become pregnant or contract an STD, they, their children, and society at large often pay a significant price, both in human and in monetary terms. The following statistics describe their sexual activity and show why it is important to improve efforts to prevent sexual risk-taking among teens:

There are still too-high levels of sexual risk-taking among teens:

- ☆ Roughly half (47 percent) of all high school students in the U.S. report having sex at least once, and close to two-thirds (63 percent) report having sex by the spring semester of their senior year of high school. This behavior puts them at risk of both pregnancy and infection with an STD.
- ☆ Although 80 to 90 percent of teens report using contraception the most recent time they had sexual intercourse, many teenagers do not use contraceptives carefully and consistently. Among 15- to 19-year-old girls relying upon oral contraceptives, only 70 percent take a pill every day.

This unprotected sexual activity leads to high pregnancy and birth rates among teens:

- ☆ About 75 of every 1,000 girls age 15 to 19 became pregnant in 2002 (the last year for which data are available), which means that, cumulatively, more than 30 percent of teenage girls in the United States become pregnant at least once by the age of 20. Despite declines in all major racial/ethnic groups, there remain large racial/ethnic disparities in these rates. In absolute numbers, about 764,000 girls of all racial/ethnic groups under age 20 become pregnant each year. More than 80 percent of these pregnancies are unintended.
- ☆ About 40 of every 1,000 girls age 15 to 19 gave birth in 2005 (the last year for which data are available). This is important because births to teens have negative consequences for the mothers and their children. Despite

recent declines in overall birth rates to teens, the percentage of births to unmarried girls under age 20 has risen dramatically, reaching 83 percent in 2005. This is important because births outside of marriage generally have more negative consequences for both mothers and their children.

- ☆ Teenage mothers are less likely to complete school, less likely to go to college, more likely to have large families, and more likely to be single—increasing the likelihood that they and their children will live in poverty. Negative consequences are particularly severe for younger mothers and their children.
- ☆ Children of teenage mothers are likely to have less supportive and stimulating home environments, lower cognitive development, less education, more behavior problems, and higher rates of both incarceration (for boys) and adolescent childbearing.
- ☆ Monetary costs are also high. Teen childbearing cost taxpayers \$9.1 billion in 2004.

Sexual risk-taking has also resulted in high rates of STD among teens:

- ☆ Young people age 15 to 24 account for one-quarter of the sexually active population in the United States but nearly one-half of all new cases of STDs. Nearly 4 million new cases occur each year among teens. As a result, about one-third of all sexually active young people become infected with an STD by age 24.
- ☆ Rates of some STDs have declined among teens, while others have increased.
- ☆ The prevalence of HIV is low among young adults in general, but the estimated number of HIV/AIDS cases among teens rose between 2001 and 2005. By the end of 2005, 6,324 AIDS cases had been reported among 13- to 19-year-olds.
- ☆ The human costs of some STDs are high, both for individual teens and for society. These diseases can lead to infertility, ectopic pregnancy, cancer, and other health problems

and can cause long-term emotional suffering and stress. Moreover, having an STD can increase the likelihood of contracting HIV.

- ☆ Many STDs are curable, but some, such as herpes simplex virus type 2 and HIV, are not.
- ☆ The monetary cost of STDs among teens is unknown, but direct costs of curable STDs among all sexually active Americans have been estimated at \$8.4 billion per year.

TYPES OF SEXUAL BEHAVIOR THAT AFFECT PREGNANCY AND STD

Most programs that seek to prevent teen pregnancy target behavior in two areas: abstinence, which enables teens to avoid pregnancy, and the correct and consistent use of contraception, which reduces the risk of pregnancy for sexually active teens. For the most part, programs that positively affect these types of behavior help reduce teen pregnancy.

However, preventing STDs requires a more complex approach. In addition to promoting abstinence and condom use, programs to prevent STDs can emphasize reducing the number of sexual partners, avoiding concurrent sexual partners (and people who have concurrent partners), increasing the number of weeks or months between sexual partners, testing for and treatment of STDs, vaccination against HPV (the human papillomavirus) and hepatitis B, and male circumcision.

Whenever appropriate, programs to prevent pregnancy and programs to prevent STDs should focus on preventing both outcomes. After all, concerns about both pregnancy and STD motivate teens to avoid sexual risk.

Communities need to send clear, consistent messages about appropriate sexual behavior. Not every organization in a community needs to advocate every method of reducing the risk of teen pregnancy and STDs, but it is important that organizations avoid sending conflicting messages to young people. Emphasizing different

types of behavior, such as abstinence and the use of condoms by teens who do have sex, will not necessarily produce conflicting messages unless organizations denigrate each other's approaches.

FACTORS INFLUENCING TEEN SEXUAL BEHAVIOR

Nearly all teenagers experience pressure to have sex at some time or other and therefore nearly all teens are at risk of pregnancy and STD. What causes a teen to decide to have sex or to use or not use condoms or other forms of contraception, if they do have sex? Research has identified more than 500 risk and protective factors that influence teens' sexual behavior. Risk factors increase the likelihood of pregnancy or STD; protective factors decrease the likelihood.

Effective programs change teens' sexual behavior by acting on the risk and protective factors that influence such behavior. Positive changes in sexual behavior may, in turn, result in lower rates of teen pregnancy or STD. Therefore, an understanding of risk and protective factors is necessary not only for changing teen sexual behavior, but also for explaining how and why programs are effective. Programs should focus on those risk and protective factors that they can markedly improve and that causally affect sexual risk behavior. The presence (or absence) of risk and protective factors can also help in identifying which teens are most at risk of having sex or having unprotected sex.

Results of some 450 studies demonstrate that risk and protective factors are both very numerous and extremely diverse. They stem from a teen's biological makeup (especially sex, age, and physical maturity), home and community environments (especially the sexual values expressed and modeled by the home and community and the disadvantage or disorganization of the home and community), the teen's friends and peers (especially their sexual values and behavior), the teen's romantic partners, and the teen's own sexual values and attitudes. They also include connection to family, school, and other groups or

institutions that discourage risky sexual behavior, encourage responsible behavior, or both. Thus, many of the factors involve some aspect of sexuality (for example, sexual values and confidence to avoid unprotected sex) and are therefore considered sexual factors. Other important factors do not involve sexuality (for example, plans for the future) and are considered nonsexual. Prevention programs have successfully targeted both types of factors, as well as a combination of the two. Of all the known risk and protective factors, teens' own sexual beliefs, values, attitudes, and intentions are the most strongly related to sexual behavior.

CRITERIA FOR INCLUDING IMPACT STUDIES IN THIS REVIEW

Conclusions about the effectiveness of various pregnancy and STD/HIV prevention programs are only as reliable as the studies on which they are based. Therefore, to be included in this review, studies of prevention programs had to meet several criteria, among them: having been conducted in the United States; having been completed or published between 1990 and 2007; focusing on teens age 12 to 18; examining impact on sexual behavior, use of condoms or other contraceptives, combined measures of sexual risk, and pregnancy, birth, or STD/HIV rates; having a reasonably strong experimental or quasi-experimental research design and a sample size of at least 100 teens; measuring behavior for a sufficient length of time; and using appropriate statistical analysis.

The strength of the evidence that a program or a group of programs are (or are not) effective is also critical. *Emerging Answers 2007* presents 14 criteria that communities and organizations can use to gauge the quality of research methods and evidence before deciding how much weight to give the results from individual studies or groups of studies.

FINDINGS ON PROGRAMS

Emerging Answers 2007 organizes programs to prevent teen pregnancy and STD/HIV into three broad categories: those that focus on sexual

risk and protective factors, those that focus on nonsexual factors, and those that focus on both. Successful programs exist in all three categories.

1. PROGRAMS THAT FOCUS ON SEXUAL FACTORS

Some programs focus primarily on changing the psychosocial risk and protective factors that involve sexuality: that is, teens' knowledge, beliefs, and attitudes about sex, perceived norms, their confidence in their skills to avoid sex or to use condoms or contraception, and their intentions regarding sexual behavior and the use of contraception. To be effective, such programs must be straightforward and specific; for example, they might discuss realistic situations that could lead to unprotected sex and methods for avoiding those situations, for remaining abstinent, and for using condoms and other contraceptives. Programs that focus on sexual factors are divided into six groups in this review.

Curriculum-based sex and STD/HIV education programs

Programs based on a written curriculum and implemented among groups of teens have been widely implemented in schools and elsewhere to prevent teen pregnancy and STD/HIV for many years. In addition, the vast majority of Americans support them—more than 80 percent of U.S. adults believe that comprehensive sex education programs, which emphasize abstinence, but also encourage condom and contraceptive use, should be implemented in schools.

Overall, about two-thirds of the curriculum-based sex and STD/HIV education programs studied have had positive effects on teen sexual behavior. For example, they delayed the initiation of sex, increased condom or contraceptive use, or both. Virtually all of the programs also improved sexual protective factors. The programs had mixed, but encouraging effects on reducing teen pregnancy, childbearing, and STDs.

An in-depth analysis of effective and ineffective programs reveals 17 important characteristics of effective programs (Box 1). These characteristics described the development of the curricula, their content (including behavioral goals, messages about behavior, and teaching strategies), and their implementation. Most programs with these 17 characteristics were effective; most effective programs incorporated most of these characteristics; and programs with these characteristics were more effective than programs without these characteristics.

The more effective curriculum-based sex and STD/HIV education programs reduced one or more measures of sexual risk by roughly a third or more, but they did not eliminate risk. Thus, these programs alone cannot prevent all unintended pregnancy or STD, but many of them can change teens' sexual behavior and help reduce teen pregnancy and STD. They should continue to be an important part of any comprehensive community prevention initiative.

Abstinence programs

Although sex education programs fall along a continuum, they can be divided into abstinence programs, which encourage and expect young people to remain abstinent, and comprehensive programs, which encourage abstinence as the safest choice but also encourage young people who are having sex to always use condoms or other measures of contraception.

At present, there does not exist any strong evidence that any abstinence program delays the initiation of sex, hastens the return to abstinence, or reduces the number of sexual partners. In addition, there is strong evidence from multiple randomized trials demonstrating that some abstinence programs chosen for evaluation because they were believed to be promising actually had no impact on teen sexual behavior. That is, they did not delay the initiation of sex, increase the return to abstinence or decrease the number of sexual partners. At the same time, they did not have a negative impact on the use of condoms or other contraceptives.

Two less rigorous studies suggest that abstinence programs may have some positive effects on sexual behavior. One program appeared to delay the initiation of sex among middle school students and to decrease current sexual activity, but these positive results were not replicated in a stronger, more rigorous study. A second program appeared to decrease the frequency of sex and reduce the number of sexual partners.

Many of the abstinence programs improved teens' values about abstinence or their intentions to abstain, but these improvements did not always endure and often did not translate into changes in behavior.

Even though there does not exist strong evidence that any particular abstinence program is effective at delaying sex or reducing sexual behavior, one should not conclude that all abstinence programs are ineffective. After all, programs are diverse, fewer than 10 rigorous studies of these programs have been carried out, and studies of two programs have provided modestly encouraging results.

In sum, studies of abstinence programs have not produced sufficient evidence to justify their widespread dissemination. Instead, efforts should be directed toward carefully developing and evaluating these programs. Only when strong evidence demonstrates that particular programs are effective should they be disseminated more widely.

Comprehensive programs

Two-thirds of the 48 comprehensive programs that supported both abstinence and the use of condoms and contraceptives for sexually active teens had positive behavioral effects. Specifically, over 40 percent of the programs delayed the initiation of sex, reduced the number of sexual partners, and increased condom or contraceptive use; almost 30 percent reduced the frequency of sex (including a return to abstinence); and more than 60 percent reduced unprotected sex. Furthermore, nearly 40 percent of the programs had positive effects on more than one of these behaviors. For example, some programs both delayed

the initiation of sex and increased condom or other contraceptive use.

No comprehensive program hastened the initiation of sex or increased the frequency of sex, results that many people fear. Emphasizing both abstinence and protection for those who do have sex is a realistic, effective approach that does not appear to confuse young people.

Comprehensive programs worked for both genders, for all major ethnic groups, for sexually inexperienced and experienced teens, in different settings, and in different communities. Programs may be especially likely to be effective in communities where teen pregnancy or STD and HIV are salient issues and may be less effective where these issues are not. Some programs' positive impact lasted for several years.

Virtually all of the comprehensive programs also had a positive impact on one or more factors affecting behavior. In particular, they improved factors such as knowledge about risks and consequences of pregnancy and STD; values and attitudes about having sex and using condoms or contraception; perception of peer norms about sex and contraception; confidence in the ability to say "no" to unwanted sex, to insist on using condoms or contraception, or to actually use condoms or contraception; intention to avoid sex or use contraception; and communication with parents or other adults about these topics. In part by improving these factors, the programs changed behavior in desired directions.

An important question is whether a program's positive results in one study can be replicated in other communities by other educators and research teams. When three programs were replicated with fidelity in different locations throughout the United States, but in the same type of setting, the original positive effects were confirmed. This is very encouraging and suggests that effective programs can remain effective when they are implemented with fidelity by other people in other communities with similar groups of young people. However, when programs were substantially shortened, when activities related

to a particular behavior (e.g., use of condoms) were deleted, or when the programs were implemented in different settings, the original positive results were not replicated.

Sex and STD/HIV education programs for parents and their teens

Parents and teenagers have remarkably few conversations about sexual matters, often because both parents and teens feel uncomfortable discussing them together. Few parents are willing or able to participate in special programs, but studies consistently indicate that when they do, their communication with their teens and their own comfort with discussing sexual matters is enhanced. These positive effects seem to dissipate with time and under some conditions, but not all conditions may affect teen sexual behavior.

Studies of seven programs for parents of teens indicate that these programs sometimes reduce teens' sexual risk-taking, particularly if the programs include components for teens that incorporate many of the 17 characteristics of effective curriculum-based programs for teens. Programs to increase parental involvement and monitoring may also have a positive impact, but the evidence is still weak.

Stand-alone video- and computer-based instruction

Most young people, even those in disadvantaged circumstances, are comfortable with computers and interactive technology, and studies have shown that interactive programs can improve knowledge and attitudes about sexuality. This technology has several benefits: it is relatively inexpensive, it can be used in most locations, and it allows programs to be replicated more easily and with greater fidelity. A possible drawback to stand-alone instruction is the lack of group interaction.

Does video- and computer-based instruction change teens' sexual behavior? No definite conclusions can be reached yet, but three studies suggest that short, noninteractive videos alone may not have any effect on behavior, and that long, interactive videos that are viewed several

times may have an impact on some behavior, possibly for as long as six months.

Clinic-based programs

Reproductive health clinics are a tried-and-true way of providing teens with reproductive health care and improving their knowledge of, access to, and skill at using condoms or other contraceptives. Many family planning clinics have special programs for teens. In addition to providing contraception, the vast majority of publicly funded clinics encourage abstinence for teens, and encourage teens to discuss sexual issues with their parents.

Large numbers of young people obtain contraceptives from publicly funded clinics each year, and presumably those contraceptives prevent many pregnancies. Large studies in California demonstrated that when access to confidential low-cost family planning services was greatly expanded, the number of teens obtaining contraception from these publicly funded clinics greatly increased. Nationally, while greater use of contraception from publicly funded clinics undoubtedly reduced teen pregnancies, it is difficult to estimate the magnitude of this impact, because the long-term impact of these family planning services on teen sexual behavior and on use of contraception from other sources is not known. Therefore, the magnitude of the effect of publicly funded clinics on teen pregnancy is difficult to estimate.

In contrast to studies that attempted to measure the impact of improving access to family planning services in general, six studies used experimental or quasi-experimental designs to measure impact on clinic protocols within the clinic. These studies demonstrated that when clinics provided one-on-one counseling and information about abstinence and contraception, presented a clear message about sexual behavior, and provided condoms or other contraceptives, they typically did not increase sexual activity but did consistently increase the use of protection by teens who were sexually active.

When clinics in four studies provided emergency contraception to sexually experienced adolescents in advance of unprotected sex, those young people were more likely to use emergency contraception than their counterparts who did not have such contraception readily available. Advance provision of emergency contraception did not increase sexual activity. However, it did not significantly reduce teen pregnancy rates either, in part because sample sizes were too small and teens used emergency contraception too few times.

School-based and school-linked clinics and school condom-availability programs

Clinics located in or near schools are ideally situated to provide reproductive health services to students—they are conveniently located, confidential, and free; their staff are selected and trained to work with adolescents; and they can integrate education, counseling, and medical services. Some school clinics dispense or provide prescriptions for contraceptives, and substantial proportions of sexually experienced students obtain contraceptives from them.

According to a small number of studies of mixed quality, providing contraceptives in school-based clinics does not hasten the onset of sexual intercourse or increase its frequency. But in most schools, unless clinics focus on pregnancy or STD/HIV prevention in addition to providing contraceptives, they do not increase the overall use of contraceptives markedly or decrease the overall rates of pregnancy or childbirth. When the clinics did focus on pregnancy prevention, gave a clear message about reducing sexual risk and avoiding pregnancy, and did make contraception available, they may have increased contraceptive use, but the evidence is not strong.

More than 300 schools without clinics make condoms available to students through counselors, nurses, teachers, vending machines, or baskets. In general, large proportions of sexually experienced students obtain condoms from school programs, particularly when multiple brands of condoms are freely available in convenient, private locations. Students also obtain condoms from school

clinics. According to a small number of studies of mixed quality, making condoms available in schools does not hasten the onset of sexual intercourse or increase its frequency. Its impact on actual use of condoms is less clear.

Community-wide pregnancy or STD/HIV prevention initiatives with multiple components

Many communities have realized that lowering teen pregnancy or STD rates requires more than isolated programs aimed at discrete groups of teens. These communities have developed a variety of broad-based collaborations or initiatives. Four of six studies of these programs found that the programs delayed first sex, increased the use of contraceptives, lowered rates of pregnancy and childbirth, or produce some combination of these effects. The findings are particularly impressive because most of the studies measured impact on community-wide outcomes, not individual outcomes measured only among those most directly involved. In addition, initiatives that focus on pregnancy or STD/HIV prevention, even those that focus primarily on condom or contraceptive use, do not hasten or increase sexual activity.

By far the most intensive community-wide program, implemented in Denmark, South Carolina, may also have been the most effective in terms of reducing pregnancy. It included extensive sex education in the classroom, individual meetings with nearly every Medicaid-eligible student (86 percent of the student body) twice a month to talk about reproductive health, and community events. Over many years the pregnancy rate in that area declined more rapidly than the rates in similar areas. However, when other communities attempted to replicate this program, but did so poorly, they did not achieve consistent positive effects.

2. PROGRAMS THAT FOCUS ON NONSEXUAL FACTORS

Many nonsexual risk and protective factors affect adolescents' sexual behavior. For teenage girls, protective factors such as good performance in

school, positive plans for the future, and strong connections to family, school, and faith community all reduce pregnancy and birth rates. In addition, many types of risky behavior are related to each other. Consequently, some professionals working with young people have advocated approaches that focus on the whole individual rather than separate programs that focus on specific types of behavior and they believe that two of the most promising approaches to reducing teen pregnancy are to improve educational and career opportunities through youth development programs and to increase the connection between young people and responsible adults and institutions such as the family, schools, and community organizations. Professionals have also considered whether welfare reform might generate new community norms about work and childbearing and also cause more low-income parents to work and thereby curtail adolescent childbearing. Programs that focus on nonsexual risk and protective factors are divided into three groups.

Welfare reform for adults

At least 16 studies have examined whether changes in the welfare requirements for adults would have an impact on birth rates among teenage girls whose parents were on welfare. They most commonly studied three changes: the requirement that parents work or participate in activities that would make them more employable, supplements to the income of employed parents, and limitations on the amount of time families could receive cash assistance. None of these changes affected adolescent childbearing. One should not conclude that welfare policies and programs that affect adolescents directly have no impact on childbearing, for such policies and programs were not evaluated.

Early childhood development programs

Programs designed to enhance the development of young children may be beneficial for many reasons, but do those benefits extend to sexual behavior in adolescence, specifically to reducing teen childbearing? Only two very small studies have tried to answer that question, so conclusions are tenta-

tive at best. Nevertheless, results are encouraging. Teens who had been in a year-round preschool program or in a three-year elementary school program designed to involve their parents delayed childbearing by more than a year, scored higher on a number of intellectual and academic measures, and obtained more years of education than those who had not been in the program. The program's impact on educational attainment may partially explain why participants delayed childbearing.

Youth development programs for adolescents

Two common types of youth development programs for adolescents are service learning and vocational education. By definition, service learning programs have two components: voluntary or unpaid service in the community (e.g., tutoring, working in nursing homes, or helping fix up parks and recreation areas), and structured time for preparation and reflection before, during, and after service (e.g., group discussions, journal writing, or papers). Sometimes the service is voluntary, and sometimes it is part of a class. Often, the service is linked to academic instruction in the classroom.

Studies have produced quite strong evidence that some service learning programs have a positive impact on teens. One study found that service learning delayed the initiation of sex among middle school students, and three studies that evaluated programs in multiple locations found that service learning reduced pregnancy rates during the academic year in which the teens were involved. The programs differed considerably, indicating that the content of the curriculum may not be particularly important, but all of the programs were very intensive and involved students for many hours (e.g. 40 to 80 hours) after school. It is not yet known why these programs are effective.

Vocational education and employment programs typically include academic instruction (or an educational requirement) and either vocational education or actual jobs. Three studies evaluated such programs, all in more than one site. These programs did not significantly reduce teen pregnancy or birth rates in the long run.

Other youth development programs, such as those designed to improve the quality of teaching in elementary school and student attachment to school, very comprehensive and intensive youth development programs, and programs for divorced parents and their adolescent children have produced consistently encouraging results, but too few studies and too many important study limitations preclude one from reaching any definitive conclusions.

3. PROGRAMS THAT FOCUS ON BOTH SEXUAL AND NONSEXUAL FACTORS

A third group of programs focuses on both sexual and nonsexual factors affecting teen sexual behavior. This review divides them into two categories.

Programs that focus on substance abuse, violence, and sexual risk-taking

Some programs that focus on both sexual and nonsexual risk and protective factors try to change other types of risky behavior, such as alcohol use, drug use, and violence, in addition to sexual risk-taking. Typically, such programs attempt to instill a wide range of positive values in young people in the hope that those values will discourage them from engaging in antisocial or risky behavior. By and large, such programs were not effective, although two of them, *Aban Aya Youth Project* and *Project AIM*, did have long-term positive effects on recent sexual activity and condom use by teenage boys. Further research is needed to determine why some programs were effective and others were not.

Programs that focus on sexual risk-taking, with sexuality and youth development components

This category actually includes quite diverse programs. They are discussed separately.

Two programs were intensive abstinence-until-marriage programs with strong curriculum and youth development components. They were found to have no significant effect on initiation of

sex, sex in the last 12 months, number of sexual partners, unprotected sex, pregnancy rates, birth rates, or STD rates.

One study evaluated several client-centered programs that provided small-group and individualized services and were designed to improve teens' information about sex, strengthen their coping skills, and provide emotional support and positive guidance from trusted adults. It found that these programs did not appear to delay sex or increase contraceptive use, but they did reduce the frequency of sex.

Programs for the sisters of pregnant teenagers are designed to help girls stay in or return to school, improve their self-esteem, give them the knowledge and skills they need to make decisions about their health, improve their access to health and reproductive health services, and increase their communication with parents and other adults. One study indicated that the programs delayed sex and decreased reported pregnancy rates, but did not significantly reduce frequency of sex or number of partners, nor did they increase the use of contraceptives.

Perhaps the most intensive program, conducted over the longest time was the *Children's Aid Society-Carrera Program (CAS-Carrera Program)*. This program recruited teens when they were about 13 to 15 years old and encouraged them to participate throughout high school. The *CAS-Carrera Program* operated five days a week and provided services in a wide range of areas: family life and sex education; general education, including individual academic assessment, tutoring, preparation for standardized exams, and assistance with college entrance; employment, including a job club, stipends, individual bank accounts, jobs, and career awareness; self-expression through the arts; individual sports; and comprehensive medical care, including mental health care, reproductive health services, and contraception when needed. In all of these areas, staff tried to create close, caring relationships with participants. They also sent a very clear message about avoiding unprotected sex and pregnancy. Although the program focused on teens, it also

provided services for the participants' parents and other adults in the community. Teens spent an average of 16 hours per month in the program during the first three years.

A rigorous study found that the program was effective for girls, but not boys. Among girls in six sites in New York City, it delayed first sex, increased the use of condoms along with another effective method of contraception, and reduced pregnancy rates—for three years. However, in six other sites outside of New York City, not all of these favorable results for girls were obtained. Moreover, when communities in another state attempted to implement the program without the benefit of training or program materials, the program did not curtail sexual risk-taking.

WHAT DO THE FINDINGS MEAN FOR COMMUNITIES?

Clearly, a wide variety of programs can be effective, especially if they target sexual risk and protective factors and behavior, but even if they do not. To reduce teen pregnancy and STDs dramatically, communities may need programs that focus on the *sexual* risk and protective factors, for these are the most highly related to sexual risk behavior, and also programs that address *non-sexual* factors that are also related to sexual risk behavior. This is good news because it increases the options available to organizations that want to reduce teen pregnancy and STDs.

But how should organizations go about choosing a program? Should they replicate an existing program, adapt a program, or design a new one?

The first step is to take stock of what teens need and what resources the community already offers. For instance, how many teens are having sex? How many of them use condoms or other contraceptives? How many become pregnant or infected with an STD and at what age? Are STDs a greater or lesser problem than pregnancy? Which STDs are most prevalent? What are the characteristics of the sexual networks through which they are transmitted? How good

are existing sex and STD/HIV education programs? Are condoms and other contraceptives and reproductive health services readily available to teens? What are the barriers teens face in remaining abstinent or using condoms or other forms of contraception? What are the other risk and protective factors that most strongly affect their sexual behavior? How stable and close-knit are families? What youth development programs are available to teens? What are the resources—staff, organizational, and monetary—available to implement different kinds of new programs?

After taking stock, organizations should adopt one of the following strategies:

1. When possible, implement with fidelity programs found to be effective for similar populations of teens
2. If careful replication is not possible, select or design programs that incorporate the key characteristics of effective programs (see Box 1)
3. If neither of these strategies is possible or appropriate, develop a new program using the process typically completed by designers of effective sex and STD/HIV education programs (see Box 1).

If an organization implements with fidelity a program that reduced sexual risk in a similar group of teens in a similar setting, chances are good that the results will be similar. If several studies found the program to be effective when replicated in different communities by different groups, the chances of success are even greater.

Fifteen very different programs in different settings have strong evidence of positive impact on behavior (Box 2). Organizations and communities should seriously consider these programs.

Organizations and communities may also want to adapt these programs or even explore others as well, including promising programs that need further study. After all, no existing program matches the needs of every group, is suited to

the values or resources of every community, or, for that matter, eliminates sexual risk-taking and pregnancy among teens. To be effective, programs must address the particular needs of the participating teens (e.g., their incorrect beliefs, their negative attitudes or their lack of skills). New guidelines and materials for adapting programs without diminishing their effectiveness will soon be available through the Division of Reproductive Health at CDC. Developing a new program poses a much greater challenge than replicating or adapting an existing one, but it gives program designers far more flexibility. When organizations develop new programs, they should consider completing the activities commonly used to develop effective programs and they should strive to develop programs incorporating as many of the characteristics and components of effective programs as possible.

For decades, dedicated adults have worked with teens to prevent unintended pregnancy. Their efforts have been rewarded with declining rates of pregnancy and childbirth. Prevention efforts have also resulted in lower rates of some STDs. An increasingly robust body of research is clarifying the types of behavior that most strongly affect pregnancy and STD/HIV transmission, is identifying the factors that influence sexual risk-taking and is revealing the effects of programs on teen sexual behavior and rates of pregnancy and STD. Yet pregnancy and STD rates are still high, and both more research and more effective programs are needed.

The challenge now is to continue building on these successes. Communities need to integrate what is learned from experience with what is learned from research and then use that knowledge to guide the development of more effective programs for teens. Such programs will help young people avoid pregnancy and STDs, make a more successful transition to adulthood, and prepare to be the parents of the next generation.



Box 1: Characteristics of Effective Curriculum-Based Programs

THE PROCESS OF DEVELOPING THE CURRICULUM	THE CONTENTS OF THE CURRICULUM ITSELF	THE PROCESS OF IMPLEMENTING THE CURRICULUM
<ol style="list-style-type: none"> 1. Involved multiple people with expertise in theory, research, and sex and STD/HIV education to develop the curriculum 2. Assessed relevant needs and assets of the target group 3. Used a logic model approach that specified the health goals, the types of behavior affecting those goals, the risk and protective factors affecting those types of behavior, and activities to change those risk and protective factors 4. Designed activities consistent with community values and available resources (e.g., staff time, staff skills, facility space and supplies) 5. Pilot-tested the program 	<p>CURRICULUM GOALS AND OBJECTIVES</p> <ol style="list-style-type: none"> 6. Focused on clear health goals—the prevention of STD/HIV, pregnancy, or both 7. Focused narrowly on specific types of behavior leading to these health goals (e.g., abstaining from sex or using condoms or other contraceptives), gave clear messages about these types of behavior, and addressed situations that might lead to them and how to avoid them 8. Addressed sexual psychosocial risk and protective factors that affect sexual behavior (e.g., knowledge, perceived risks, values, attitudes, perceived norms, and self-efficacy) and changed them <p>ACTIVITIES AND TEACHING METHODOLOGIES</p> <ol style="list-style-type: none"> 9. Created a safe social environment for young people to participate 10. Included multiple activities to change each of the targeted risk and protective factors 11. Employed instructionally sound teaching methods that actively involved participants, that helped them personalize the information, and that were designed to change the targeted risk and protective factors 12. Employed activities, instructional methods, and behavioral messages that were appropriate to the teens’ culture, developmental age, and sexual experience 13. Covered topics in a logical sequence 	<ol style="list-style-type: none"> 14. Secured at least minimal support from appropriate authorities, such as departments of health, school districts, or community organizations 15. Selected educators with desired characteristics (whenever possible), trained them, and provided monitoring, supervision, and support 16. If needed, implemented activities to recruit and retain teens and overcome barriers to their involvement (e.g., publicized the program, offered food or obtained consent) 17. Implemented virtually all activities with reasonable fidelity

Box 2: Programs with Strong Evidence of Positive Impact on Sexual Behavior or Pregnancy or STD Rates

CURRICULUM-BASED SEX AND STD/HIV EDUCATION PROGRAMS

1. Becoming a Responsible Teen: An HIV Risk Reduction Program for Adolescents [1]
2. ¡Cuidate! (Take Care of Yourself) The Latino Youth Health Promotion Program [2]
3. Draw the Line, Respect the Line [3-5] (Implemented with both genders; found effective for boys only)
4. Making Proud Choices: A Safer Sex Approach to HIV/STDs and Teen Pregnancy Prevention [6]
5. Reducing the Risk: Building Skills to Prevent Pregnancy, STD & HIV [7]
6. Safer Choices: Preventing HIV, Other STD and Pregnancy [8-11]
7. SiHLE: Sistas, Informing, Healing, Living, Empowering [12] (Implemented and effective for girls only)

MOTHER-ADOLESCENT PROGRAMS

8. Keepin' It R.E.A.L.! [13]¹

CLINIC PROTOCOLS AND ONE-ON-ONE PROGRAMS

9. Advance provision of emergency contraception (Implemented and effective for girls only)
10. Reproductive Health Counseling for Young Men [14]

COMMUNITY PROGRAMS WITH MULTIPLE COMPONENTS

11. HIV Prevention for Adolescents in Low-Income Housing Developments [15]

SERVICE LEARNING²

12. Reach for Health Community Youth Service Learning [16]
13. Teen Outreach Program [17]

MULTI-COMPONENT PROGRAMS WITH INTENSIVE SEXUALITY AND YOUTH DEVELOPMENT COMPONENTS

14. Aban Aya [18] (Implemented with both genders; found effective for boys only)
15. Children's Aid Society Carrera Program [19] (Implemented with both genders; found effective for girls only)³

1. A similar program for fathers and their sons is called *REAL Men*. An evaluation of it provided evidence of impact on delay in sex and greater condom use, but it is not included in this list because only seven Boys and Girls Clubs were randomly assigned to intervention groups.

2. All of the service learning programs that have been evaluated, including *Reach for Health Community Youth Service*, *Teen Outreach Program*, and *Learn and Serve*, have found results suggesting a positive impact upon either sexual behavior or pregnancy. According to the evaluation of *TOP*, the particular curriculum used in the small-group component did not appear to be critical to the success of service learning. Evaluation of the *Learn and Serve* programs did not meet the criteria for inclusion here because it did not use an experimental design, but it did confirm the impact of service learning on pregnancy, especially among middle school youth.

3. This program has provided the strongest evidence of reducing pregnancy for three years as reported by girls. However, when not implemented in New York City it was less effective, and when not implemented with the benefit of *CAS-Carrera* training, materials, and oversight in one study, it was not effective.

References

1. St. Lawrence, J. S. (2005). *Becoming a Responsible Teen: An HIV Risk-Reduction Program for Adolescents*. Scotts Valley, CA: ETR Associates.
2. Villarruel, A. M., Jemmott, L. S., & Jemmott, J. B., III. (Unpublished). *Cuidate! A curriculum to reduce sexual risk behavior among Latino youth*. Ann Arbor, MI: University of Michigan.
3. Coyle, K., Marin, B., Gardner, C., Cummings, J., Gomez, C., & Kirby, D. (2003). *Draw the Line/Respect the Line: Setting Limits to Prevent HIV, STD and Pregnancy: Grade 7*. Scotts Valley, CA: ETR Associates.
4. Marin, B., Coyle, K., Cummings, J., Gardner, C., Gomez, C., & Kirby, D. (2003). *Draw the Line/Respect the Line: Setting Limits to Prevent HIV, STD and Pregnancy: Grade 8*. Scotts Valley, CA: ETR Associates.
5. Marin, B., Coyle, K., Gomez, C., Jinich, S., & Kirby, D. (2003). *Draw the Line/Respect the Line: Setting Limits to Prevent HIV, STD and Pregnancy: Grade 6*. Scotts Valley, CA: ETR Associates.
6. Jemmott, L. S., Jemmott, J. B., III, & McCaffree, K. (2002). *Making Proud Choices! A Safer-Sex Approach to HIV/STDs and Teen Pregnancy Prevention*. New York: Select Media.
7. Barth, R. P. (2004). *Reducing the Risk: Building Skills to Prevent Pregnancy, STD and HIV*. Scotts Valley, CA: ETR Associates.
8. Coyle, K., & Fetro, J. V. (1998). *Safer Choices: Preventing HIV, Other STD and Pregnancy: Level 2*. Scotts Valley, CA: ETR Associates.
9. Coyle, K. K. (1998). *Safer Choices: Preventing HIV, Other STD and Pregnancy: Peer leader training guide*. Scotts Valley, CA: ETR Associates.
10. ETR Associates & Center for Health Promotion Research and Development. (1998). *Safer Choices: Preventing HIV, Other STD and Pregnancy: Implementation manual*. Scotts Valley, CA: ETR Associates.
11. Fetro, J. V., Barth, R. P., & Coyle, K. K. (1998). *Safer Choices: Preventing HIV, Other STD and Pregnancy: Level 1*. Scotts
12. DiClemente, R., Wingood, G., Harrington, K., Lang, D., Davies, S., Hook, E. W., III, et al. (2006). *SiHLE: Health Workshops for Young Black Women*. Los Altos, CA: Sociometrics.
13. Dilorio, C., Resnicow, K., McCarty, F., De, A. K., Dudley, W. N., Wang, D. T., et al. (Unpublished). *Keepin' It R.E.A.L.!*. Atlanta, GA: Emory University.
14. Danielson, R., Plunkett, A., Marcy, S., Wiest, W., & Greenlick, M. (2003). *Reproductive Health Counseling for Young Men*. Los Altos, CA: Sociometrics.
15. Sikkema, K., Anderson, E., Kelly, J., Winett, R., Gore-Felton, C., Roffman, R., et al. (2005). Outcomes of a randomized, controlled community-level HIV prevention intervention for adolescents in low-income housing developments. *AIDS*, 19(14), 1509-1516.
16. O'Donnell, L., Doval, A. S., Duran, R., Haber, D., Atnafou, R., Piessens, P., et al. (2003). *Reach for Health: A School Sponsored Community Youth Service Intervention for Middle School Students*. Los Altos, CA: Sociometrics.
17. Wyman Center, Inc. (2007). *Changing Scenes*. St Louis, MO: Wyman Center, Inc.
18. Flay, B., Graumlich, S., & The Aban Aya Team. (2006). *Aban Aya Youth Project: Preventing high-risk behaviors among African American youth grades 5-8*. Los Altos, CA: Sociometrics.
19. Carrera, M. (2006). Children's Aid Society Carrera Adolescent Pregnancy Prevention Program. New York City: *Children's Aid Society—Carrera Adolescent Pregnancy Prevention Program*.



ABOUT THE AUTHOR

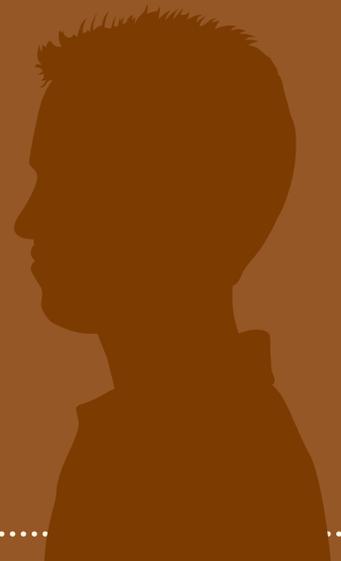
Douglas Kirby, Ph.D., is a Senior Research Scientist at ETR Associates in Scotts Valley, California. For 30 years, he has directed state-wide or nation-wide studies of adolescent sexual behavior, abstinence programs, sexuality and STD/HIV education programs, school-based clinics, school condom-availability programs and youth development programs. He co-authored research on the *Reducing the Risk*, *Safer Choices*, *Draw the Line* and *All4You!* curricula, all of which significantly reduced unprotected sex, either by delaying sex, reducing the number of partners, increasing condom use, or increasing contraceptive use. He has identified important behaviors that affect the sexual transmission of STDs, painted a more comprehensive and detailed picture of the risk and protective factors associated with adolescent sexual behavior, contraceptive use, and pregnancy, and identified important common characteristics of effective sexuality education and HIV education programs. In 1997 he authored *No Easy Answers: Research Findings on Programs to Reduce Teen Pregnancy* and in 2001, he authored *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy*. In 2005, he completed a review of 83 studies of sex and HIV education around the entire world. Over the years, he has also authored or co-authored more than 100 volumes, articles and chapters on adolescent sexual behavior and programs designed to change that behavior. These have included reviews of the field for the National Campaign to Prevent Teen Pregnancy, the Centers for Disease Control, the National Institutes of Health, and the World Health Organization, among others. He has also conducted research in Uganda on the factors leading to the reduction of HIV transmission in that country.



The National Campaign to Prevent Teen and Unplanned Pregnancy seeks to improve the lives and future prospects of children and families and, in particular, to help ensure that children are born into stable, two-parent families who are committed to and ready for the demanding task of raising the next generation. Our specific strategy is to prevent teen pregnancy and unplanned pregnancy among single, young adults. We support a combination of responsible values and behavior by both men and women and responsible policies in both the public and private sectors.

If we are successful, child and family well-being will improve. There will be less poverty, more opportunities for young men and women to complete their education or achieve other life goals, fewer abortions, and a stronger nation.

For many years, people concerned about preventing teen pregnancy have turned to The National Campaign to Prevent Teen and Unplanned Pregnancy for help in determining what programs are likely to work for the teens in their community. Emerging Answers 2007 offers such help.



1776 MASSACHUSETTS AVENUE, NW · SUITE 200 · WASHINGTON, DC 20036 · 202-478-8500

TEENPREGNANCY.ORG / THENATIONALCAMPAIGN.ORG / STAYTEEN.ORG