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BLUEPRINTS *for*

VIOLENCE PREVENTION

OJJDP Report

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BLUEPRINTS *for* VIOLENCE PREVENTION

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Foreword

Identifying programs that have been proven effective is essential to preventing juvenile violence and delinquency. The Blueprints for Violence Prevention initiative, developed by the Center for the Study and Prevention of Violence at the University of Colorado–Boulder and supported by the Office of Juvenile Justice and Delinquency Prevention, has developed and implemented research-based criteria for evaluating program effectiveness.

Given limited resources, communities seek to ensure that the programs they implement will produce the desired results. After reviewing more than 600 programs, the Blueprints initiative has identified 11 model programs and 21 promising programs that prevent violence and drug use and treat youth with problem behaviors. To further assess the effectiveness of the Blueprints programs, OJJDP funded replications of Blueprints programs nationwide— delivering training and technical assistance to 42 sites replicating 8 of the Blueprints model violence prevention programs and to another 105 sites (representing approximately 400 schools) implementing a model drug prevention program.

This Report describes the Blueprints programs, presents lessons learned about program implementation, and provides recommendations for program designers, funders, and implementing agencies and organizations. It is hoped that the information provided in this Report will assist communities in selecting and implementing research-based programs that enable youth to fulfill their potential and lead productive lives.

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Chapter 1: Identification of Effective Programs

Introduction

Blueprints for Violence Prevention began at the Center for the Study and Prevention of Violence (CSPV), as an initiative of the State of Colorado, with initial funding from the Colorado Division of Criminal Justice, the Centers for Disease Control and Prevention, and the Pennsylvania Commission on Crime and Delinquency. The project was conceived as an effort to identify model violence prevention programs and implement them within the State of Colorado. Soon after the initiation of Blueprints, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) became an active supporter of the project and provided funding to CSPV to sponsor program replications in sites across the United States. As a result, Blueprints has evolved into a large-scale prevention initiative, both identifying model programs and providing technical support to help sites choose and implement programs with a high degree of integrity (Elliott and Tolan, 1998; Mueller and Mihalic, 1999; Mihalic et al., 2001; U.S. Department of Health and Human Services, 2001).

After reviewing more than 600 violence prevention programs, the Blueprints initiative has identified 11 model programs and 21 promising programs. Taken together, these programs target populations spanning the developmental age range, from birth to 19 years (table 1.1). In addition, they both prevent violence and treat youth already displaying problem behaviors. Some of these programs are *universal* in that they are intended for an entire population of children (e.g., in a classroom, school, or neighborhood) who have not exhibited problems. Other programs are *selected* and target high-risk children who may already show some level of antisocial behavior. Still other programs are *indicated* and treat children who show clear signs of delinquent or antisocial behavior (table 1.2).

In addition to providing funding that allows the continuing identification of effective prevention programs, OJJDP has promoted the adoption of research-based programs and funded replications of Blueprints programs nationwide. This initiative has resulted in the delivery of training and technical assistance to 42 sites replicating 8 of the Blueprints model programs and the delivery of program materials, training, and technical assistance to another 105 sites, representing approximately 400 schools that are implementing the Life Skills Training Program, also a model

Table 1.1: Age-Groups Targeted by Blueprints Programs

Blueprints Program	Age Group				
	Pregnancy/Infancy	Early Childhood	Elementary School	Junior High School	High School
Model Programs					
Big Brothers Big Sisters of America			X	X	X
Bullying Prevention Program			X	X	
Functional Family Therapy				X	X
Incredible Years		X	X		
Life Skills Training				X	
Midwestern Prevention Project				X	
Multidimensional Treatment Foster Care				X	X
Multisystemic Therapy				X	X
Nurse-Family Partnership	X				
Project No Drug Abuse					X
Promoting Alternative Thinking Strategies			X		
Promising Programs					
Athletes Training and Learning to Avoid Steroids					
Brief Strategic Family Therapy			X	X	X
CASASTART			X	X	
Fast Track			X		
Good Behavior Game			X		
Guiding Good Choices			X	X	
High/Scope Perry Preschool		X			
Houston Child Development Center	X	X			
I Can Problem Solve		X	X		
Intensive Protective Supervision				X	X
Linking the Interests of Families and Teachers			X		
Preventive Intervention				X	
Preventive Treatment Program			X		
Project Northland				X	
Promoting Action Through Holistic Education				X	X
School Transitional Environment Program				X	X
Seattle Social Development Project			X	X	
Strengthening Families Program: Parents and Children 10–14			X	X	
Student Training Through Urban Strategies				X	X
Syracuse Family Development Program	X	X			
Yale Child Welfare Project	X	X			

Table 1.2: Target Populations of Blueprints Programs

Blueprints Program	Target Population		
	Universal	Selected	Indicated
Model Programs			
Big Brothers Big Sisters of America		X	
Bullying Prevention Program	X		
Functional Family Therapy		X	X
Incredible Years		X	X
Life Skills Training	X		
Midwestern Prevention Project	X		
Multidimensional Treatment Foster Care			X
Multisystemic Therapy			X
Nurse-Family Partnership		X	
Project Towards No Drug Abuse		X	
Promoting Alternative Thinking Strategies	X		
Promising Programs			
Athletes Training and Learning to Avoid Steroids			
Brief Strategic Family Therapy		X	
CASASTART		X	
Fast Track	X	X	
Good Behavior Game	X		
Guiding Good Choices	X		
High/Scope Perry Preschool		X	
Houston Child Development Center		X	
I Can Problem Solve	X	X	
Intensive Protective Supervision			X
Linking the Interests of Families and Teachers	X		
Preventive Intervention		X	
Preventive Treatment Program		X	
Project Northland	X		
Promoting Action Through Holistic Education	X	X	
School Transitional Environment Program		X	
Seattle Social Development Project	X		
Strengthening Families Program: Parents and Children 10–14	X		
Student Training Through Urban Strategies		X	
Syracuse Family Development Program		X	
Yale Child Welfare Project		X	

program. Whereas the designers of each program provide training and consultation to sites, Blueprints staff conduct a detailed and comprehensive process evaluation at each site to monitor the quality of replication.

The overarching goals of the Blueprints for Violence Prevention initiative are four-fold:

- Identify effective, research-based programs.
- Provide training and technical assistance to transfer the requisite knowledge and skills to implement these programs.
- Monitor the implementation process to provide feedback to sites and ensure that programs are implemented with fidelity to their original intent and design.
- Gather and disseminate information regarding factors that enhance the quality and fidelity of implementation.

The identification of effective programs, the first goal and the focus of this chapter, has been in the forefront of the national agenda on violence prevention for the last decade. Federal agencies that distribute grant funds have increasingly emphasized the need to implement programs that have been demonstrated to be effective. The emphasis on research-based practices has led communities to search for the best practices and to determine what types of programs would be most appropriate and effective for their population. As a result, identifying effective prevention and intervention programs has become a priority for both federal and private agencies. Over the past decade, many organizations have produced lists of programs and practices that demonstrate at least some evidence of effectiveness on violence/aggression, delinquency, substance abuse, and their related risk and protective factors. Taken as a whole, this work has resulted in a large repertoire of research-based programs from which the practitioner community may choose.

Although these lists provide a valuable resource for the community, they can be confusing to the public. First, most differ in focus, with some lists being quite narrow (for example, limiting their descriptions to drug abuse, family strengthening, or school-based programs only). In addition, and perhaps more important, the criteria for program inclusion vary tremendously from list to list, with some agencies adopting a more rigorous set of criteria than others (Elliott, 1997; U.S. Department of Health and Human Services, 2001). In fact, one must be diligent when examining

these lists to ensure that at least a minimal scientific standard has been applied (for example, that programs demonstrate effectiveness using a research design that includes a control group). Anything less rigorous than this approach cannot provide sufficient evidence to justify disseminating and implementing programs on a wide scale.

The Blueprints initiative likely uses the most rigorous set of criteria in the field. This high standard is necessary for programs that will be widely disseminated because conducting local evaluations to determine program effectiveness is not always possible at the community level. Therefore, it is important that programs demonstrate positive results, based on a rigorous evaluation, before their widespread dissemination.

There are several reasons for requiring high, rigorous standards:

- Effects achieved in clinical trials are rarely duplicated when a program is implemented by others under normal (nonlaboratory), real-life conditions. In other words, some lowering of effects should be expected.

- Public confidence in the research community could weaken or be lost if recommended programs prove in practice to be ineffective.

- Huge financial investments are involved (e.g., the nation's investments in prisons, probation, and parole) and, without clear scientific standards, decisions might be made solely on financial grounds.

- Conducting outcome evaluations of most local programs is not feasible, nor would this be desirable (because of the cost in resources), so researchers must be confident in their recommendations.

Blueprints model programs meet such a standard, and a widespread consensus exists that Blueprints programs are effective interventions.

Blueprints Selection Criteria

Using rigorous criteria when assessing the effectiveness of a prevention or intervention program is important. Although a program model can rarely, if ever, be proven superior to all others, a particular model elicits greater confidence after its theoretical rationale, goals and objectives, and outcome evaluation data have been carefully reviewed. In turn, a community that implements such a strategy has a greater likelihood of a successful violence prevention effort.

Although many scholarly reviews have identified exemplary programs, the methodological standards used in evaluating program effectiveness vary. In rare cases, researchers have actually scored each program evaluation on its methodological rigor. For the majority of other reviews, however, the standards used are variable, sometimes unrelated to effectiveness, and seldom made explicit. As a result, claims of program effectiveness in most of these reviews must be viewed with caution. In contrast, Blueprints programs meet rigorous tests of effectiveness in the field. While the Blueprints Advisory Board* considers many criteria when reviewing program effectiveness, three factors are considered most important:

- Evidence of a deterrent effect with a strong research design.
- Demonstration of a sustained effect.
- Multiple site replication.

Programs meeting all three of these criteria are classified as "model" programs, whereas programs meeting at least the first criterion but not all three are considered "promising."

Evidence of a Deterrent Effect With a Strong Research Design

All Blueprints programs must demonstrate evidence of a deterrent effect on problem behavior and be based on a strong research design—this is the most important of the selection criteria. In

* Blueprints Advisory Board members are Tom Cook, Ph.D., Northwestern University; Delbert Elliott, Ph.D., University of Colorado; Denise Gottfredson, Ph.D., University of Maryland; David Hawkins, Ph.D., University of Washington; Hope Hill, Ph.D., Howard University; Mark Lipsey, Ph.D., Vanderbilt University; and Patrick Tolan, Ph.D., University of Illinois. Peter Greenwood, Ph.D., The RAND Corporation, is a former board member.

general, relatively few programs have demonstrated effectiveness in preventing the onset or reducing the prevalence (i.e., individual offending rates) of violent, aggressive, and other problem behaviors.

The Blueprints Advisory Board accepts evidence of deterrent effects for three types of outcomes—violence (including childhood aggression and conduct disorder), delinquency, and drug use. Providing sufficient quantitative data to document effectiveness inpreventing or reducing these behaviors requires the use of evaluative designs that provide reasonable confidence in the findings (e.g., experimental designs with random assignment or quasi-experimental designs with matched control groups). Most researchers recognize random assignment studies (randomized trials) executed with fidelity as providing the highest standard of program evaluation. Random assignments offer the most compelling evidence that study results are due to the intervention rather than to preexisting differences between experimental and control groups or other threats to internal validity, such as maturation, selection bias, and testing effects. In these studies, assignment to experimental or control conditions is determined solely by chance, and the likelihood of differences being attributed to the assignment process can be assessed.

When random assignment cannot be used, the Advisory Board considers studies that use control groups matched as closely as possible to experimental groups on relevant characteristics (e.g., gender, race, age, socioeconomic status, income), as well as studies with control groups that use statistical techniques to control for initial differences on key variables. As carefully as experimental and control groups are matched, however, determining if the groups vary on characteristics that have not been matched or controlled for and that are related to program outcome is impossible. Random assignment, therefore, is widely considered the most rigorous of methodological approaches.

Research designs vary greatly in quality, particularly with respect to three key factors: sample size, attrition, and measurement issues. When considering these issues, it is important to assess several potential problems:

- Sample sizes must be large enough to provide statistical power to detect at least moderate effects. When small sample sizes are used, detecting statistically significant differences between groups is more difficult.

- Attrition, or loss of study participants over time, may be indicative of problems in program implementation or may be a failure to locate subjects during a followup period. Attrition is problematic, particularly because it can compromise the integrity of the original randomization or matching process. It reduces confidence that the original sample and final sample are comparable and that the final experimental and control comparisons reflect only treatment effects.

- Tests to measure outcomes must be administered fairly, accurately, and consistently to all study participants. For example, the use of inconsistent measures over time may produce less reliable test scores. The instruments used to measure outcomes should be demonstrated to be reliable and valid.

A Note About School-Based Evaluations. Evaluations of school-based programs, with schools as the unit of analysis, typically require multiple schools per condition to perform a main effects analysis with sufficient power to detect effects. Since meeting this criterion requires a complex evaluation which is very costly, it would eliminate most existing school-level evaluations from consideration in the Blueprints Series. Therefore, school-based evaluations that use experimental or quasi-experimental designs with relatively few schools, but more than one in each condition, will be considered in the Blueprints Series if they meet an additional burden of proof. They must demonstrate consistency across effects and across replications with multiple measures from different sources. The theoretical rationale should be well developed, and there should be a rigorous evaluation of theory with evidence that results are consistently in line with expectations (i.e., there are changes in the risk and protective factors that mediate the changes in outcomes). Outcomes should be robust, with at least moderate effects. Evidence that the benefits of the program outweigh the costs are helpful. The decision to accept this level of proof is driven entirely by the state of current research. This standard of proof should not be assumed to be ideal. Evaluations with multiple schools are most desirable and should be encouraged among funders and researchers.

Sustained Effect

Many scholarly reviews classify a program as effective if it demonstrates success by the end of the treatment phase. However, having program effects that endure beyond treatment, and from one developmental period to the next, is also important. Unfortunately, many programs that

demonstrate initial success fail to show long-term maintenance of the effects after the intervention has ended, or may even show a decline in effectiveness over time. In addition, some programs may have a delayed effect, so that the full impact of an intervention or treatment may not be realized at the end of treatment. For example, a preschool program (such as Head Start) designed to offset the effects of poverty on school performance should demonstrate effectiveness when children start school. It is also critical, however, that the effect is sustained over a longer period of time—i.e., through high school, when problem behavior peaks. Only by showing sustained effects can the program help adolescents maintain a successful life course.

For these reasons, designation as a Blueprints program requires a sustained effect at least 1 year beyond treatment, with no subsequent evidence that the effect is lost. Although programs that have specifically failed to produce sustained effects do not qualify for inclusion in Blueprints' model or promising categories, programs that have not yet demonstrated long-term effects (e.g., sufficient time has not yet elapsed or followup analyses were never planned) may be considered as promising.

Multiple Site Replication

Replication is an important element in establishing program effectiveness and understanding what works best, in what situations, and for whom. Some programs are successful because of unique characteristics in the original site that may be difficult to duplicate in another location (e.g., the presence of a charismatic leader or extensive community support and involvement). Replication establishes the strength of a program and its prevention effects by demonstrating that it can be successfully implemented in other sites.

Programs that have demonstrated success in diverse settings (e.g., urban, suburban, and rural areas) and with diverse populations (e.g., different socioeconomic, racial, and cultural groups) create greater confidence that such programs can be transferred to new settings. As communities prepare to tackle the problems of violence, delinquency, and substance abuse, knowledge that a specific program has had success in various settings with similar populations adds to its credibility.

Some projects initially may be implemented as a multisite single design (i.e., several sites are included in the evaluation design). When this occurs, having evaluation results from each site, as

well as pooled results, to facilitate the assessment of transportability to other sites is preferable. Becoming a Blueprints model program requires at least one replication with fidelity demonstrating that the program continues to be effective. Multiple site replication is not a criterion for the promising category.

Additional Factors

In the selection of Blueprints programs, two additional factors are considered: whether a program conducted an analysis of mediating factors and whether a program is cost effective. Although this information is highly desirable, in the beginning of the Blueprints initiative, few programs had conducted either analysis so these subsequently had to be dropped as required criteria. They are required factors for school-based evaluations with small numbers of schools per condition.

Analysis of Mediating Factors

The Blueprints Advisory Board looks for evidence that change in the targeted risk or protective factor mediates the change in problem behavior. This evidence clearly strengthens the claim that participation in the program is responsible for the reduction in problem behavior, and it contributes to the theoretical understanding of the causal processes involved. Unfortunately, many programs reporting significant deterrent effects have not collected the data necessary to complete an analysis of mediating factors.

Costs Versus Benefits

Program costs should be reasonable and should be less (or at least no greater) than the program's expected benefits. High-pricetag programs are difficult to sustain when competition is high and funding resources low. Moreover, implementing expensive programs that will, at best, have small effects on violence is counterproductive.

Although outcome evaluation research initially established that Blueprints programs were effective in reducing violence, delinquency, and drug use, very few programs had reliable cost-benefit estimates. More recently, however, two cost-benefit studies that included Blueprints programs—the RAND Corporation study and a study by the Washington State Institute for Public

Policy—suggest that these programs are cost-effective (Greenwood et al., 1996; Washington State Institute for Public Policy, 1998, 2001).

The RAND study (Greenwood et al., 1996) compared four different crime prevention approaches with California's "Three Strikes and You're Out" law (Cal. Penal Code 667, 1994). Three of these approaches, graduation incentives (e.g., Quantum Opportunities Program), parent training (e.g., Functional Family Therapy), and delinquent supervision (e.g., Intensive Protective Supervision), compared favorably with the Three Strikes law in terms of serious crime prevented per dollar expended, and the first two were dramatically more cost effective. The fourth approach, home visitation/daycare (e.g., Nurse-Family Partnership), was shown to be less cost effective than the Three Strikes law, but several caveats should be kept in mind when examining this evidence. First, home visitation/daycare occurs during the first 5 years of childhood, and up to 15 years pass before the intervention can begin to affect serious street crimes, which typically occur as youth enter puberty. In addition, several positive outcomes realized by the program are not included in the analyses, which focus solely on criminal justice cost savings. For example, reductions in child abuse, and other substantial favorable results in child health and development, educational achievement, and economic well-being, are not included in these analyses, even though they could generate government savings that exceed program costs.

The Washington State Institute for Public Policy (Aos et al., 2001) completed a cost-benefit study of programs aimed at age groups from early childhood through adulthood. The Institute examined the costs of crime to taxpayers (i.e., criminal justice costs with and without costs to victims who suffer personal and property losses). Several programs had benefits that exceeded costs, including some of the Blueprints programs (see table 1.3). Programs designed for juvenile offenders (e.g., Multisystemic Therapy, Multidimensional Treatment Foster Care, and Functional Family Therapy) had the largest and most consistent economic returns. Programs targeting younger children and youth not already involved in the criminal justice system (e.g., early childhood education programs) had smaller, although positive, returns when considering savings in criminal justice costs. Their benefits, however, could also be calculated in other ways, such as savings to the health and welfare systems.

Table 1.3: Summary of Program Economics (all monetary values in year 2000 dollars)

Program	Average Size of the Crime Reduction Effect*	Net Direct Costs per Participant	Net Benefits per Participant (i.e. Benefits minus Costs)†
Mentoring (e.g., BBBSA)	-0.04	$1,054	$225 to $4,524
Intensive Probation (versus regular caseloads)	-0.05	$2,234	$176 to $6,812
Early Childhood Education (e.g., High/Scope Perry, Montreal, and Syracuse)	-0.10	$8,936	-$4,754 to $6,972
Seattle Social Development Project	-0.13	$4,355	-$456 to $14,169
Functional Family Therapy	-0.25	$2,161	$14,149 to $59,067
Nurse-Family Partnership	-0.29	$7,733	-$2,067 to $15,918
Multisystemic Therapy	-0.31	$4,743	$31,661 to $131,918
Multidimensional Treatment Foster Care	-0.37	$2,052	$21,836 to $87,622

* Negative effect size means lower crime.
† Lower end of range includes taxpayer benefits only; upper end of range includes taxpayer and crime victim benefits.

Source: Aos et al., 2001

Summary

The Blueprints selection criteria establish a high standard of program effectiveness that has proved difficult for most programs to meet, thus explaining why only 11 model programs have been identified to date. Although rigorous, this standard reflects the level of confidence necessary for recommending that these programs be widely disseminated and to provide communities that replicate these programs with reasonable assurances that they will prevent violence when implemented with fidelity. The Blueprints initiative was never intended as a means of compiling a comprehensive list of all programs that had some evidence of effectiveness (e.g., see Sherman et al., 1997). Instead, the model programs, in particular, were selected to reflect programs with very strong research designs that demonstrated evidence of effectiveness in delinquency, violence, or substance abuse prevention and reduction.

Programs not on the Blueprints list are not necessarily ineffective. In fact, many good programs probably exist that have not yet undergone the rigorous evaluations needed to qualify as a Blueprints program. Similarly, other programs may have demonstrated effectiveness in outcomes not considered by the Blueprints Advisory Board. Nonetheless, the Blueprints initiative has revealed that many prevention and intervention programs are ineffective, and a few have unintended harmful effects. Thus, performing outcome evaluations is critical and results should be made available to the community. Without this information, determining what programs work will be impossible, and being confident that children are benefiting from these efforts will be difficult. The Blueprints team continues to review new research findings with the hope of expanding the list of Blueprints programs to include other credible, effective interventions that communities can confidently implement. Blueprints staff also review ongoing evaluations of all the Blueprints programs to refine the knowledge of their sustained effects and their adaptability to other populations and settings.

Blueprints Program Descriptions

In addition to identifying specific prevention and intervention programs that are effective in reducing violence, delinquency, and drug use, assessing more generally whether certain types of prevention practices are effective is important. Research must identify whether targeting certain risk or protective factors, or changing certain aspects of environments or individuals, is likely to lead to success.

In fact, research has demonstrated that some violence prevention practices are more effective than others and some practices do not work at all (Sherman et al., 1998; Lipsey, 1992; Mihalic and Aultman-Bettridge, 2004). Moreover, as Elliott and Tolan (1998) note, "doing something is not always better than doing nothing," because some interventions (such as Scared Straight or other prison visitation programs) have been shown to be harmful to adolescents (Petrosino, Turpin-Petrosino, and Finckenauer, 2000). Unfortunately, most of the interventions that are introduced into schools or implemented by prevention and treatment agencies are not linked to knowledge of the success or failure of the intervention (either general or specific). Resources are thus often wasted on ineffectual programs rather than being used to implement programs that have been demonstrated to be effective.

Much of the current knowledge regarding effective prevention and intervention strategies stems from meta-analysis, a statistical technique for aggregating the findings of many studies and using average effect sizes to identify the strongest types of strategies. This research demonstrates that behavioral, skills-oriented, and multimodal practices, in both criminal justice and other settings, can reduce crime (Lipsey, 1992). For example, family therapy and improving parenting practices have been shown to be key strategies in reducing crime and delinquency, by improving the youth's home environment, which can be the source of many problems (Sherman et al., 1997). Schools have also become a primary locus of prevention efforts as they contain both a ready delivery mechanism and a population base of students able to participate. Research in the area of school-based prevention demonstrates that school and discipline management interventions, interventions to establish norms and expectations for behavior, and instructional programs that teach social competency skills using cognitive-behavioral methods are all effective practices. In contrast, other types of programs (such as instructional programs that do not use cognitive-behavioral methods, therapeutic interventions such as counseling and social work, and recreation and leisure programs) are consistently ineffective in reducing outcomes related to violence and other antisocial behaviors (Gottfredson, 1998; Mihalic and Aultman-Bettridge, 2004).

As a whole, the Blueprints programs (both model and promising) fall under many of the effective strategies listed above. The following sections describe many of these strategies and provide information regarding the Blueprints programs that adopt each approach. Not all strategies are reviewed here—only those that contain Blueprints programs. Some programs are multicomponent and could fall into more than one category; however, an effort has been made to classify each program according to its primary emphasis and, thus, each program is listed under only one

strategy. The programs are divided into two broad domains—those with an environmental focus (i.e., changing the family, school, and community environment) and those that focus on the individual, including cognitive-behavioral, mentoring, and community supervision and aftercare programs. The distinctions among universal, selected, and indicated programs should be kept in mind when reading these descriptions. Most of the Blueprints programs are universal (i.e., designed for populations that do not exhibit problem behaviors) or selected (i.e., designed for populations considered "at-risk" or displaying initial levels of problem behaviors) interventions. Relatively few of the Blueprints programs are indicated interventions, which target identified perpetrators of crime, even though research (MacKenzie, 1997; Lipsey and Wilson, 1998) has identified several strategies and programs in this category that have been used by the criminal justice system and that have shown some evidence of effectiveness. However, for specific programs, few of the research studies are of sufficient quality to permit any firm conclusions about their effectiveness, and problems with small numbers of subjects and with attrition often exist (MacKenzie, 1997).

Environmentally Focused Programs

Changing the Home Environment

Family-related factors play an important role in children's development. For example, poor family functioning, parenting practices, and family interaction styles have been demonstrated as consistent risk factors for substance use, delinquency, and criminal behavior (Hawkins et al., 1998; Snyder and Patterson, 1987). As a result of this research, many programs have been designed to alter the family environment. Three successful strategies that strive to change the individual behavior of the child by altering the social environment of the family include home visiting, parent training, and family therapy programs. These interventions are designed to improve family relations and create a home environment that is conducive to the successful development of the child. Early childhood education programs are included in the discussion of home visiting interventions because they typically cut across the domains of family and school and often include home visits to parents. These programs at times emphasize individual-level risk factors, but may also be considered environmentally focused because they target children living in economically poor and high-risk neighborhoods.

Home Visiting and Early Childhood Education

Research has consistently shown that a small percentage of teenagers account for the majority of teenage crimes (Office of Juvenile Justice and Delinquency Prevention, 2001). Many of these youth are life-course persistent offenders (Loeber and Farrington, 1998, 2000; Moffitt, 1993) with an early onset of aggressive and behavioral problems, often associated with inattention-hyperactivity, neurocognitive risk (e.g., poor reading, language, and problem-solving skills), difficult temperament, and poor parenting (Moffitt and Caspi, 2001). These problems compromise healthy development and increase the risk for significant impediments to later wellness—impediments such as violence, delinquency, dropping out of school, depression (Cowen and Durlak, 2000; Kazdin, 1985), and drug abuse (Brook et al., 1986; Dishion et al., 1991). Although the majority of young children with behavioral problems will not become life-course persistent offenders (Derzon, 2001; Yeager and Lewis, 2000), conduct disorder and other forms of antisocial behavior become resistant to change over time. The prognosis for children who continue to exhibit problems as adolescents is poor unless early intervention is offered to improve their behavioral adjustment at home and at school (Kazdin, 1987). Intervention during the prenatal and infancy periods, focused on preventing health and developmental problems, can prevent later delinquency by interrupting the negative socialization processes that begin during childhood and continue through adolescence (Herrenkohl et al., 2001).

The prenatal period is an important time for intervention, as many factors that place a child at risk occur during pregnancy. Babies born to mothers who smoke, use drugs, and/or maintain poor diets and health during pregnancy are at increased risk of perinatal difficulties. In addition, most pregnant teens younger than age 15 receive no prenatal care or inadequate care (Hamburg, 1992) and babies born to teenage mothers are at increased risk of premature delivery and/or low birthweight. These problems, in addition to other medical stresses at birth, are associated with parent- and teacher-rated behavior problems between the ages of 5 and 7 (McGee, Silva, and Williams, 1984), delinquency at age 18 (Werner, 1987), and violent delinquency (Mednick, Brennan, and Kandel, 1988). Childhood abuse and neglect are also related to later criminal behavior. Being abused or neglected as a child increases the likelihood of arrest as a juvenile by 59 percent, as an adult by 28 percent, and for a violent crime by 30 percent (Widom and Maxfield, 2001).

Not all children who experience such problems have poor outcomes, as demonstrated in research by Werner (1989, 1990; Werner and Smith, 1992) who followed a cohort of children born in 1955

on the island of Kauai for 30 years. Despite experiencing four or more debilitating risk factors by age 2 (such as parental psychopathology, extreme poverty, perinatal birth disorders, low parental educational level), many children in the study were able to overcome the adversity in their lives. Such children may be considered "resilient," and the protective factors they may experience, which help them overcome such problems, can be classified into three major domains (see Garmezy, 1985; Greenberg, Domitrovich, and Bumbarger, 1999; Masten and Garmezy, 1985):

- Individual characteristics (i.e., dispositional attributes of the individual that may have a strong genetic base), such as easy temperament, positive orientation, intelligence, self-esteem, autonomy, and sociability.

- Family characteristics, such as secure attachments, lack of family conflict, and cohesive and warm family interactions that provide emotional support and affection.

- External (environmental) support systems at school, work, or church that encourage and reinforce children's coping strategies, reward individuals' competencies and determination, and provide them with a sense of meaning and an internal locus of control.

Obviously, not all children possess these protective factors, and many can benefit from programs that target these three areas. Intervening early with high-risk infants and preschool-age children and their parents, through home visitation and early childhood development and education programs, can help foster resiliency in children so that they may overcome adversity.

Most of the early childhood programs that have been successful contain similar elements. For instance, they are intensive, multicomponent programs that address the various influences that affect a child's development. Most also include home visits to provide parenting skills training and support and an early educational component that focuses on the child's development (Wasserman, Miller, and Cothern, 2000). Home visiting and early childhood education programs have been most beneficial to high-risk populations, such as poor families and unmarried women (Olds and Kitzman, 1993; Gomby, Culross, and Behrman, 1999). Intervention usually begins during pregnancy or shortly after the birth of the child and continues until around age 4. These programs may be delivered in the home or in a childcare setting, or both. In fact, some of the most powerful and effective interventions seek to attain multiple goals (Gomby et al., 1993) by combining preschool or daycare with home visits. Such interventions typically provide weekly to monthly home visits to provide parents with information about parenting and/or child development issues

and to offer parents emotional and social support, counseling, and referrals to outside agencies. In addition, parents are taught how to support and maintain the social, emotional, and cognitive gains that children achieve in the daycare or preschool setting.

Programs offering solely home visiting, such as the Nurse-Family Partnership, work with mothers during their pregnancy to ensure that they receive prenatal care and information on nutrition and health, which helps decrease the likelihood of birth abnormalities and neuropsychological impairments. The programs also work with parents after the birth of the child to provide support and to teach skills designed to alter the parent-child interaction, improve the developmental life course of the child, and promote a positive maternal life course.

The primary goal of early childhood education programs is school readiness: preparing at-risk children to enter school by improving cognitive development and constructing a role for the child that is conducive to success. These programs generally focus directly on the child and strive to improve cognitive development through language development, reading, and cognitively stimulating play. These early gains often result in improved school readiness and academic achievement, which, in turn, strengthen bonds to school.

Outcome evaluations of home visiting and early childhood education programs have primarily focused on the health and cognitive development of the child, with less emphasis on antisocial behavior. However, several programs described below have demonstrated long-term effects in reducing behavior problems during adolescence, when violent offending peaks. Gains have been even more dramatic when home visiting has been augmented by center-based early childhood programs and/or medical services, such as in the High/Scope Perry Preschool project (Gomby et al., 1993).

Model Programs

Nurse-Family Partnership

Nurse-Family Partnership (formerly Prenatal and Infancy Home Visitation by Nurses) sends nurses to the homes of low-income, first-time mothers, beginning during pregnancy and

continuing for 2 years after the birth of the child. The program is designed to help women improve their prenatal health and the outcomes of pregnancy through the following methods:

- Encouraging good health habits.
- Teaching mothers the skills necessary to care for their infants and toddlers, in order to improve children's health and development.
- Improving women's own personal development, giving particular attention to the planning of future pregnancies, women's educational achievement, and parents' participation in the workforce.

The program has been tested with both white and African American families in rural and urban settings.

Nurse-Family Partnership has had positive outcomes on mothers' obstetrical health, psychosocial functioning, and other health-related behaviors (Olds et al., 1998). During the first 15 years after delivery of their first child, low-income, unmarried women who received nurse home visits had 31 percent fewer subsequent births, longer intervals between births (an average of 2 years), fewer months on welfare (60 months versus 90 months), 44 percent fewer behavioral problems due to alcohol and drug abuse, 69 percent fewer arrests, and 81 percent fewer criminal convictions than those in the control group. The program has also reduced rates of child abuse and neglect by helping young parents learn effective parenting skills and effective means of coping with a range of issues, including depression, anger, impulsiveness, and substance abuse. One study found that participation in the program was associated with a 79-percent reduction in state-verified cases of child abuse and neglect among mothers who were poor and unmarried. In their second year of life, nurse-visited children had 56 percent fewer visits to emergency rooms for injuries and ingestions than children who were not visited.

Long-term positive outcomes for adolescents have also been reported. Adolescents whose mothers received nurse home visits more than a decade earlier were 60 percent less likely to have run away, 56 percent less likely to have been arrested, and 80 percent less likely to have been convicted of a crime than adolescents whose mothers did not receive visits. They also smoked fewer cigarettes per day, consumed less alcohol in the past 6 months, and exhibited fewer behavioral problems related to alcohol and drug use.

Home visitation has also been found to be cost effective. An evaluation by Rand Corporation indicates that providing home visitation to low-income and unmarried mothers results in a savings to government and society. The savings exceed program costs by a factor of 4 by the time an intervention child reaches age 15; the return on the investment is realized by the child's fourth birthday (Karoly et al., 1998). Cost savings are primarily in reduced welfare and criminal justice expenditures, but also in increases in tax revenues (Olds et al., 1999).

Promising Programs

High/Scope Perry Preschool

High/Scope Perry Preschool provides high-quality early childhood education to children ages 3 and 4 from low-socioeconomic families and addresses the relationship between childhood poverty and school failure by fostering social, emotional, and intellectual competence. The 2-year intervention operates 2.5 hours per day, 5 days per week, for 7 months per year, and includes weekly home visits by teachers. Based on the theory that early success or failure in school may set children on a life-course trajectory of success or failure, High/Scope Perry helps children start school with aptitudes and attitudes conducive to success (Schweinhart and Weikart, 1980). This goal is achieved by providing children with cognitive stimulation, which may be lacking in the home environment, that leads to greater cognitive ability when children enter school. In addition, the program teaches children to be active and independent learners, helps parents support the child's education, and provides teachers with effective teaching methods and support (Parks, 2000). The success achieved by the program comes from the children's increased school readiness, which results in positive reinforcement from teachers and students, enhanced academic performance, and stronger commitment to school (Parks, 2000; Schweinhart and Weikart, 1980).

The evaluation, based on the random assignment of 123 African American youth to preschool and no-preschool groups over a period of 5 years (1962 to 1966), demonstrated greater school success (academic achievement and commitment) and social responsibility for participants, including reductions in antisocial behavior and misconduct from elementary school to age 15. In addition, participants had fewer fights, criminal justice contacts, and arrests through age 19 compared with those who had not attended preschool (31 percent of program participants had been arrested for a crime, compared with 51 percent of individuals in the control group). Program participants also had greater socioeconomic success (increased employment, economic independence, satisfaction with work) at age 19 (Berrueta-Clement et al., 1984; Schweinhart and

Weikart, 1980; Weikart, Bond, and McNeil, 1978). At age 27, the experimental group had half as many arrests as the control group; they also had higher earnings. More of the women in the experimental group had graduated from high school, had attended college or vocational training, were married, and had fewer children out of wedlock (Schweinhart, Barnes, and Weikart, 1993).

The program provides a savings to the public of about 7 times the initial investment per child, with a return of $7.16 per dollar spent (Barnett, 1993; Parks, 2000) incurred through savings in welfare assistance, special education, criminal justice costs, and costs to crime victims, and increased tax revenue from higher earnings. An independent cost analysis by the RAND Corporation (Karoly et al., 1998) found a return of more than twice the initial investment, even after eliminating the savings to victims (the least reliable savings category).

Yale Child Welfare Project, Syracuse Family Development Program, and Houston Child Development Center

Three other programs—the Yale Child Welfare Project, the Syracuse Family Development Program, and the Houston Child Development Center—also target low-income families and are designed to provide family support and early education. These programs offer a broad range of support for both mothers and children. Through home visits, mothers receive individualized training, support, and information about nutrition, health, safety, child development issues. Parents learn to develop appropriate interactions with children, solve immediate family crises, achieve long-term goals, and access community resources. Each program also provides high-quality daycare/education for the children. The Yale and Syracuse programs begin during pregnancy and continue until children are 30 months or 5 years old, respectively, while the Houston program targets children 2 months to 3 years. The Houston program, through random assignment of 102 Mexican American mother-child pairs, demonstrated increases in IQ and cognitive ability at 24 months for program children; less destructive, overactive, and negative attention-seeking behavior at ages 4–7; and lower teacher ratings of impulsive, obstinate, disruptive, hostile, and fighting behaviors at ages 8–11 (Johnson and Breckenridge, 1982; Johnson and Walker, 1987). The Yale (Seitz, Rosenbaum, and Apfel, 1985) and Syracuse programs (Lally, et al., 1988), using quasi-experimental designs with matched control groups and primarily targeting African American women, each demonstrated long-term improvements, 10 years after the intervention, in social adjustment, school attendance, and academic achievement. The Syracuse program also reduced juvenile delinquency, with 6 percent of participants having a juvenile record by age 15, compared to 22 percent of individuals in the control group, and those

with criminal records had fewer and less serious offenses. Additionally, the Yale program demonstrated dramatic effects for program mothers and families who had increased their educational achievement, reduced family size, and created more economically independent families. Unfortunately, the high cost of these programs makes them somewhat unattractive.

Parent Training

Other family factors that place children at risk for delinquency and violent behavior include harsh or ineffective parenting, poor parental monitoring, poor attachment, and lack of warmth and nurturing (Capaldi and Patterson, 1996; Farrington, 1994; Gorman-Smith et al., 1996; Gorman-Smith, Tolan, and Henry, 2000). Parents of children with behavioral problems tend to be more inconsistent and punitive in their disciplinary methods, and the children tend to use aversive behaviors to shape and manipulate their family environments (Patterson, Reid, and Dishion, 1992). Parent training helps to overcome the problems generally associated with poor family management practices by teaching parents how to provide consistent and supportive forms of discipline (e.g., using positive consequences such as praise, rewards, and privileges for good behavior, and noncoercive, negative consequences such as time-out and loss of privileges for inappropriate and noncompliant behavior) to replace or reduce physical punishment and how to develop clear standards for child behavior (Patterson, 1982; Webster-Stratton et al., 2001). Interventions that promote parent's knowledge, attitudes, and behavior related to child rearing, improve children's health and development, and prevent child abuse and neglect can have an important impact on the subsequent development of antisocial behavior because they interrupt the development of delinquency and related behavioral disorders.

Model Programs

Incredible Years: Parent, Teacher, and Child Training Series

The Incredible Years: Parent, Teacher, and Child Training Series is a comprehensive set of curriculums designed to promote social competence and prevent, reduce, and treat conduct problems in young children. The program targets children ages 2 to 8 who exhibit or are at risk for conduct problems. In all three programs, trained facilitators use videotaped scenes to encourage group discussion, problem solving, and sharing of ideas. The parent training component includes three series: BASIC, ADVANCE, and SCHOOL. BASIC is the core element of program delivery. The other two series, and the teacher and child training programs, are

recommended elements of program delivery. BASIC teaches parents interactive play and reinforcement skills, nonviolent discipline techniques, logical and natural consequences, and problem-solving strategies. ADVANCE addresses family risk factors such as depression, marital discord, poor coping skills, poor anger management, and lack of emotional support. SCHOOL focuses on teaching ways to enhance youth's academic and social competencies.

The teacher training component helps strengthen classroom management skills. It seeks to help instructors encourage and motivate students, promote students' prosocial behavior and their cooperation with peers and teachers, teach anger management and problem-solving skills, and reduce classroom aggression.

The child training component, also known as the Dina Dinosaur curriculum, emphasizes skills related to developing emotional competency, having empathy with others and learning perspective, making and keeping friends, managing anger, solving interpersonal problems, following school rules, and succeeding at school. It is designed for use as a "pull out" treatment program for small groups of children who exhibit conduct problems, although it is also being tested as a preventive, classroomwide curriculum.

In six randomized trials, the parent training program has been shown to reduce children's conduct problems, increase positive affect and compliance to parental commands, and increase school bonding and involvement. These improvements have been sustained up to 3 years after the intervention (Webster-Stratton, 1990). In two randomized trials, the teacher program has been shown to reduce peer aggression in the classroom, increase positive interactions with teachers and peers, and improve school readiness (Webster-Stratton, Reid, and Hammond, 2000). In two randomized trials of the child program, conduct problems at home were reduced and cognitive problem-solving strategies with peers improved (Webster-Stratton and Hammond, 1997). (See Webster-Stratton et al., 2001, for a summary of all evaluations.)

Promising Programs

Guiding Good Choices

Guiding Good Choices (GGC; formerly Preparing for the Drug Free Years) is a family competency training program for parents of children in grades four through eight (ages 8 to 14) that promotes healthy, protective parent-child interactions and reduces children's risk for early

initiation into substance use and other common adolescent problems. GGC is a weekly, five-session, 2-hour, multimedia program that strengthens parents' child-rearing techniques, parent-child bonding, and children's peer resistance skills. Children are required to attend one of the five sessions, where they learn skills to resist peer pressure to engage in inappropriate behavior. The other four sessions involve only parents, and include instruction in the following areas:

- Identifying risk factors for adolescent substance use and creating strategies to enhance the family's protective processes.

- Developing effective parenting skills, including creating clear guidelines regarding substance use, monitoring compliance with these guidelines, and providing effective and appropriate consequences when necessary.

- Managing anger and family conflict.

- Providing opportunities for positive child involvement in family activities.

The program has been successfully implemented in nine middle school families who live in rural, economically stressed neighborhoods in the Midwest. Families who volunteered to receive the program were randomly assigned to the intervention or a wait-list control. Compared to the control condition, the GGC intervention was more effective in promoting proactive communication from parent to child and improving the quality of the parent-child relationship (Kosterman et al., 1997). An additional longitudinal study included 33 rural, low-income schools in 19 midwestern counties that were divided into blocks based on the proportion of students that resided in lower income households and on school size. Schools within each block were then randomly assigned to one of two treatment conditions—GGC or the Strengthening Families Program for Parents and Children 10–14 (see below)—or to a minimal contact control condition. As compared to children in the control group, GGC children demonstrated significantly less alcohol initiation and positive (though nonsignificant) trends in reducing tobacco and marijuana use (Spoth, Redmond, and Shin, 2001).

Strengthening Families Program: Parents and Children 10–14

The Strengthening Families Program: Parents and Children 10–14 (SFP 10–14; formerly Iowa Strengthening Families) is a universal, family-based intervention intended to delay the onset of adolescent substance use and behavior problems by improving family practices. Specifically targeted for change are parents' general child management skills, parent-child affective relationships, and family communication. The program includes seven weekly sessions in which parents and children learn individual skills for the first hour and are brought together in the second hour to work on improving family communication and practices. During the group parent training sessions (with an average of eight families), parents are taught the following skills:

- How to clarify expectations of children's behavior, especially regarding substance use.
- How to use appropriate and consistent discipline techniques.
- How to manage strong emotions concerning their children.
- How to use effective communication.

In the children sessions, adolescents learn similar skills, as well as peer resistance and refusal techniques, personal and social interaction skills, and stress and emotion management. In the combined parent and children classes, families practice conflict resolution and communication skills, and engage in activities designed to increase family cohesiveness.

The program was evaluated with all 6th-grade students and their families in 33 rural, midwestern schools, in which most families were white and middle class, and most parents had obtained at least a high school education. The randomized block design described above was used, with schools randomly assigned to receive SFP 10–14, GGC, or a minimal contact control condition. At posttest, SFP 10–14 parents showed improved child management practices, including monitoring, discipline, and standard setting; increased parent-child communication; more child involvement in family activities and decisions; and strengthened family affective quality (Spoth, Redmond, and Shin, 1998). The 1- and 2-year followups revealed that participating adolescents had lower rates of alcohol initiation in both years, as well as 30–60 percent relative reductions in alcohol use, using alcohol without parents' permission, and being drunk (Spoth, Redmond, and Lepper, 1999). The 4-year followup (at the end of grade 10) indicated lower proportions of youth reporting lifetime use of alcohol, tobacco, and marijuana (Spoth, Redmond, and Shin, 2001).

Family Therapy

A number of adolescent problems can be traced to family discord and conflict, maladaptive parenting, and poor communication. Family therapy programs, which vary in their theoretical underpinnings and techniques, are intensive clinical interventions that work with multiple members of a family to improve family interaction and communication. Unlike parent training programs, which typically provide specific child management skills training in a relatively structured fashion, family therapy interventions are designed to assess the interrelationships among all family members, including the target child, and to overcome family members' resistance to change. Skills training may also occur, but it typically consumes only a minor portion of the contact time (Gordon and Arbuthnot, 1987).

Model Programs

Functional Family Therapy

Functional Family Therapy (FFT) is a short-term, family-based prevention and intervention program that has been successfully applied in a variety of contexts to treat high-risk youth and their families from different backgrounds. This multisystemic clinical program was specifically designed to help diverse populations of underserved and at-risk youth, ages 11 to 18, who often enter the system angry, without hope, and/or resistant to treatment. On average, participating youth and families attend 12 1-hour sessions spread over 3 months; more difficult cases require 26 to 30 hours of direct service. Therapists' caseloads average 12–16 families.

Three distinct treatment phases are offered in FFT:

- Phase 1, Engagement and Motivation, is designed to engage and motivate youth and families and help them face and overcome intense negative affects (such as hopelessness and anger) that prevent change.

- Phase 2, Behavior Change, focuses on the development and implementation of immediate and long-term behavior change plans that are culturally appropriate, context sensitive, and tailored to the unique characteristics of each family member.

- Phase 3, Generalization, helps families apply positive family change to other problem areas and/or situations, maintain changes, and prevent relapse. To ensure long-term support of changes, FFT links families with available community resources.

Program success with a wide range of interventionists, including paraprofessionals and trainees with various professional degrees, has been demonstrated and replicated for more than 25 years. Controlled comparison studies with followup periods of 1, 3, and 5 years have demonstrated significant and long-term reductions in youth re-offending, ranging from 25 percent to 60 percent, and also reductions in sibling entry into high-risk behaviors (Alexander et al., 2000). This program also has been demonstrated to be cost effective (Aos et al., 2001).

Multisystemic Therapy

Multisystemic Therapy (MST) provides cost-effective, community-based clinical treatment to violent and chronic juvenile offenders who are at high risk of out-of-home placement. The program is based on the philosophy that individuals live within a complex social network, encompassing individual, family, and extrafamilial (peer, school, and neighborhood) factors. Behavior problems can stem from and be maintained by problematic interactions within this social network, and MST specifically targets the multiple factors that can contribute to antisocial behavior. The overarching goal of the program is to help parents understand and help their children overcome behavior problems, including disengaging from deviant peers and overcoming poor school performance. To empower families, MST addresses identified barriers to effective parenting (e.g., parental drug abuse and mental health problems) and helps family members build an indigenous social support network involving friends, extended family, neighborhoods, and church members. In doing so, MST uses the strengths in each youth's social network to promote positive change in his or her behavior. Likewise, treatment is designed with input from the target family to increase family collaboration and participation.

Consistent with the program philosophy, and to enhance generalization to other settings, MST is typically provided in the home, school, and other community locations. Therapists with low caseloads (4–6 families)—and who are available 24 hours per day, 7 days per week—provide the treatment, placing developmentally appropriate demands for responsible behavior on youth and their families. Intervention plans include strategic family therapy, structural family therapy, behavioral parent training, and cognitive behavior therapies. The average duration of treatment is about 4 months, which includes approximately 60 hours of therapist-family contact.

Program evaluations have demonstrated 25 to 70 percent reductions in long-term rates of rearrest, and 47 to 64 percent reductions in out-of-home placements. Moreover, families receiving MST have shown extensive improvements in family functioning and decreases in youth's mental health problems. Positive results were maintained for nearly 4 years after treatment ended (Henggeler et al., 2001). This program has been demonstrated to be cost-effective (Aos et al., 2001).

Promising Programs

Brief Strategic Family Therapy

Brief Strategic Family Therapy (BSFT) adopts a structural family systems framework to improve youth's behavior problems. BSFT is a short-term, problem-focused clinical intervention, involving 12 to 15 sessions over 3 months, with sessions lasting from 60 to 90 minutes. The target population is children ages 8 to 17 who display or are at risk for developing behavior problems, including substance abuse.

Therapy is based on the assumptions that each family has unique characteristics that emerge when family members interact and that this family system influences all members of the family. The ways in which family members interact and behave with one another can be either successful or unsuccessful, and BSFT seeks to improve patterns of maladaptive family interactions that are directly related to youth's behavior problems. This goal is achieved through a three-step process:

- Joining: understanding resistance and engaging the family in therapy.
- Diagnosis: identifying the interaction patterns that encourage problematic youth behavior.
- Restructuring: developing a specific plan to help change maladaptive family interaction patterns by working in the present, reframing the family system, and working with boundaries and alliances.

In one evaluation of BSFT, adolescents showed significant reductions in conduct disorder and socialized aggression from pre- to posttreatment, whereas adolescents participating in group therapy showed no significant changes. Adolescents receiving the treatment also showed clinically

significant changes in conduct disorder and socialized aggression, as compared with the control group (Santisteban et al., 2003).

Changing the School Environment

Many individual-level risk factors for crime and violence (e.g., abuse and neglect, behavioral disorders, impulsiveness, and risk-taking temperaments) may be brought into the school environment by individual students. Moreover, when a concentration of children with these characteristics exists, there is an emergent contextual effect at school, where physical aggression, bullying, and disrespect (for teachers, other students, and authority figures) become normative. Further, the way the school is structured and the training and competence of the staff can also undermine a successful course of youth development, facilitating the creation and maintenance of delinquent or antisocial peer groups, low expectations for academic success, intimidation of teachers, and low value on education. The overall climate, structure, and environment of the school can thus contribute to students' behavior problems or, at the least, impede any successful resolution of them. School ecology programs recognize these problems and try to identify and change conditions in the school that might negatively affect students. Such factors may include school norms and behavior expectations, administrative policies, tracking strategies, school structure and size, and teacher attitudes and practices.

School ecology programs typically focus on two major issues (Felner et al., 2001):

- Reducing the conditions of risk in the school environment to prevent the onset of adaptive difficulties.

- Enhancing the school environment to ensure that all youth acquire competencies and strengths.

To create and maintain systemic changes in school climate and structure, and to generalize effects across settings, programs must involve teachers, administrators, parents, students, and interested community members. School-based strategies can be roughly grouped into four categories:

- Interventions to establish norms or expectations for behavior.
- Reorganization of classes or grades.

- Interventions to improve school discipline and management.
- Interventions to enhance classroom management and instruction.

Establishing Norms or Expectations for Behavior

Research on school discipline problems indicates that the ways in which norms and expectations for behavior are established can have a strong effect on levels of school crime and violence. In schools in which behavior norms are clearly stated, well-known by students, and consistently and fairly enforced, student and teacher victimization are reduced (Gottfredson, 1997). Many programs try to change norms in multiple environments, including the family and the community. These interventions operate under the assumption that risk factors in multiple domains (e.g., social, family, peer, school, and the individual) must be addressed to affect substantial changes in youth behavior.

Model Programs

Bullying Prevention Program

The Bullying Prevention Program focuses on restructuring the social environment of primary and middle schools in order to provide fewer opportunities for bullying behavior and to reduce the positive social rewards (such as peer approval and support) gained through bullying behavior. Overall, the program tries to create a school environment characterized by positive interest and involvement by adults and firm limits on unacceptable behavior; norm and rule violations consistently result in sanctions and adults act as authority figures and positive role models for youth. Although the Bullying Prevention Program actively involves students, adults in the school are seen as the driving force in changing the normative environment. To facilitate such a sweeping change, the program seeks to ensure that adults are aware of bullying problems and actively involved in their prevention, conveying the message that "bullying is not accepted in our class/school, and we will see to it that it comes to an end" (Olweus, Limber, and Mihalic, 1999).

The Bullying Prevention Program targets change in the school, classroom, and individual student. The program begins with the creation of a coordinating committee and a schoolwide survey assessing the extent and nature of the bullying problem. Following the survey, a school conference day is held to review questionnaire results. The coordinating committee then begins to plan strategies to change school-level conditions, such as creating a system of improved monitoring of

students during recess and lunch times, and plans for parent and staff meetings to discuss the program and the progress of implementation. The classroom-level intervention involves the creation of class rules regarding bullying behavior and regular class meetings to discuss issues and/or rule infractions. In addition, parent-teacher meetings may occur to discuss elements of the program. The program is also implemented at the individual student level with individual intervention programs for bullies and their parents, and for victims and their parents, to ensure that any ongoing behavior is stopped and that victims receive needed support.

Research on the Bullying Prevention Program utilized a quasi-experimental design with time-lagged contrasts between age-equivalent groups (successive cohorts of children for particular grade levels), involving 2,400 students in grades 4 to 7 in 42 schools (28 elementary and 14 junior high) in Bergen, Norway. These students were followed for 2.5 years. The evaluation documented decreases of (typically) 50 percent or more in the frequency with which students reported being bullied by others. In addition, substantial reductions in student involvement in vandalism, fighting, thefts, and truancy were demonstrated. Several aspects of the social climate of the class showed marked improvement, including better order and discipline, improved social relationships, and increases in positive attitudes toward school (Olweus, Limber, and Mihalic, 1999). A program replication with 6,388 students in grades 4 through 6 in 39 schools in 3 matched pairs of rural South Carolina school districts revealed a decrease in the frequency with which intervention children bullied other children (by approximately 25 percent), while students in schools that were part of the control group reported a corresponding increase. Additionally, self-reported antisocial behavior increased in the control group, whereas no increase or a slower rate of increase with regard to general delinquency, vandalism, school misbehavior, and punishment for school-related misbehaviors was seen among the treated children (Olweus, Limber, and Mihalic, 1999).

Midwestern Prevention Project

The Midwestern Prevention Project (MPP) includes school normative environment change as one of many components of a comprehensive, 3- to 5-year community-based prevention program that targets "gateway" drug use of tobacco, alcohol, and marijuana—those substances that traditionally precede the use of other illicit substances. The program involves schools, parents, and community organizations, uses mass media to communicate messages regarding the dangers of gateway drug use, and seeks changes in health policies and community practices to reduce youth access to targeted substances. Each domain (school, parent, community organization, and

health policy) is targeted in a specific timeline, beginning with the school intervention in the first year and ending with the health policy changes.

The school-based intervention is the central component of the program and is designed as a primary prevention program. The program begins in either sixth or seventh grade, depending on the school district and the grade that represents the transition to middle or junior high school. Ten to thirteen classroom sessions are delivered by teachers trained in the curriculum and may be facilitated by peer leaders who are nominated by the class and trained by teachers in the program components. The lessons focus on increasing drug resistance skills and also try to change the social climate of the school to encourage nondrug use norms. Five booster sessions are offered in the second year of the intervention to reinforce concepts learned previously, and followup peer counseling and support are made available through the high school years.

These school activities are followed by a parent component designed to develop norms within the family that discourage drug use through parent skills training sessions targeting parent-child communication and prevention support skills. This component continues throughout the middle/junior high school years. At the same time, a group composed of the school principal, teachers, parents, and peer leaders works to change the school climate by institutionalizing the school-based curriculum, helping to monitor drug use on the school grounds and in the community, and planning and implementing the parent training program.

The community component occurs during the last stages of the prevention effort and involves community leaders who create and implement drug abuse prevention services within the neighborhood, plan community activities that complement the school and family programs, and develop strategies to change health policies (such as local ordinances restricting cigarette smoking in public venues). This final goal is achieved through subcommittees of local government and community leaders and is largely directed at reducing supply of and demand for gateway substances. A mass media campaign using television, radio, and print outlets is delivered throughout the life of the project to convey to the larger community messages that are central to the student and parent skills training components of the program.

MPP was first evaluated in Kansas City using a quasi-experimental design in which schools (n=50) and communities were assigned to program conditions on the basis of scheduling flexibility and demographic matching where possible. Three sampling plans were used to collect data, including the random assignment of 8 schools to treatment or control groups that involved 1,607

students who were followed over a 3-year period. The program has demonstrated net reductions of up to 40 percent in adolescent daily smoking and marijuana use, along with smaller reductions in alcohol use, with the results maintained through high school graduation. Reductions in use of other illicit substances (amphetamines, LSD, and inhalants) have been shown for participating youth into early adulthood (age 23). The program has also demonstrated reductions in parents' use of alcohol and marijuana, and increased positive parent-child communication regarding drug use and abuse prevention. In addition, communities participating in MPP have reported that the program successfully facilitated the development of community services for drug abuse prevention (Pentz, Mihalic, and Grotpeter, 1997).

Promising Programs

Project Northland

Project Northland is a 3-year, comprehensive, community-based program designed to prevent alcohol use in middle school students. Each year of the program has a specific theme. In the first year, improvement in parent-child communication is targeted, and sixth grade students, with the assistance of their parents, are assigned homework assignments that relate to adolescent alcohol use. A communitywide task force is also established in the first year to address issues of community norms and youth access to alcohol. The second year involves a teacher-led classroom curriculum that emphasizes drug resistance skills. Parent involvement is encouraged, and youth are given opportunities to participate in structured, alcohol-free activities. In the final year, eighth grade students are encouraged to become community activists against teen alcohol use, thereby generalizing the lessons learned in the first 2 years of the project to the larger community.

Evaluation of the program involved 24 Minnesota school districts (4 smaller districts were combined with nearby districts to ensure adequate sample size in each unit, for a total of 20 combined districts) that were blocked by size and then randomly assigned to treatment and control groups. By the end of the eighth grade, the program demonstrated lower scores on a "tendency to use alcohol" scale, less use of alcohol in both the past week and past month, and lower frequency of the combination of alcohol and cigarette use for program youth. In addition, students who were nonusers of alcohol at the beginning of the intervention demonstrated significantly lower onset rates for alcohol, and cigarette and marijuana use was significantly lower in the intervention districts (Perry et al., 1996).

Athletes Training and Learning to Avoid Steroids

Athletes Training and Learning to Avoid Steroids (ATLAS) is a school-based program designed to prevent anabolic androgenic steroid use among student athletes. The program uses educational and skills training sessions to address the risks and benefits of steroid use. ATLAS is integrated into team practice sessions and consists of an educational classroom curriculum and weight room skills training sessions. The educational component covers subjects such as risk factors of steroid use, strength training, and skills development to refuse steroid and other substances. In addition, nutritional recommendations and false claims for over-the-counter supplements are discussed. The weight room skills training sessions focus on demonstrating proper techniques for lifting and provide additional contact time to reinforce the classroom curriculum. The program also incorporates an informational session for parents to help them reinforce the knowledge gained by the youth.

The evaluation of this program included a large sample (n=3,207) of males participating in high school football programs in Portland, OR (Goldberg et al., 2000). Findings demonstrated favorable effects on the reduction of anabolic steroid use. Longitudinal results indicated that this program enhanced healthy behaviors, reduced factors that encouraged steroid use, and lowered intent to use steroids and other substances over a 1-year period following the intervention. Although the reported use of alcohol and other drug use (marijuana, amphetamines, and narcotics) was not lower for the experimental group at program completion, it was significantly lower compared to the control group at the 1-year followup.

Reorganization of Grades or Classes

Many schoolwide interventions focus on the school climate, or environment, by making changes to the substantive structure of the school itself. These efforts are designed to buffer the negative effects of large schools or class sizes on students (particularly at-risk adolescents) and to help avoid or overcome problems some students encounter when transitioning into new and larger, urban junior or senior high school settings, especially in districts that have multiple feeder schools. The restructuring is intended to make the school environment more relevant for some students by offering work study and community service programs in addition to traditional academic subjects.

Model Programs

None.

Promising Programs

School Transitional Environment Program

The School Transitional Environment Program (STEP) tries to ease the transition of high-risk youth entering larger, more complex school settings (Felner and Adan, 1988). STEP involves a reorganization of the social system to eliminate the flux and complexity that students confront when entering a new school. Incoming ninth grade students are assigned to teams of 60 to 100 students, who are then assigned to homerooms in which all students are STEP participants. Homeroom teachers serve as guidance counselors and assist students in making a successful transition. They also maintain contact with parents regarding students' progress. All students participating in the program are assigned to the same core courses, which are located physically close together in order to facilitate a stable peer group and create a smaller "school within a school" physical environment.

An initial study of STEP was conducted in a large urban high school with a total enrollment of approximately 1,700 students. Students were randomly selected for participation in STEP from approximately 450 entering students who had satisfactory school adjustment and demonstrated no need for special mental health services. The 65 participating STEP students were matched by sex, age, and ethnic background with 120 control students who met the same criteria. A total of 59 experimental and 113 control group students completed all assessments. By the end of the ninth grade, students participating in the program demonstrated better attendance and school performance and more stable levels of self-confidence than control students. STEP students also perceived the school environment as more stable, understandable, well-organized, involving, and supportive (Felner, Ginter, and Primavera, 1982).

A long-term followup (Felner and Adan, 1988) of the initial sample through the high school years (for which 90 percent of school records were obtained) showed that STEP students had higher grades and fewer absences than control subjects in the 9th and 10th grades, although this gap closed in the last 2 years of high school. The dropout rate of STEP students was half that of the control group (21 percent and 43 percent, respectively).

A replication of the program in two high schools and three junior high schools showed significantly fewer decreases in academic performance or self-concept and fewer increases on measures of emotional and behavioral dysfunction and difficulties (e.g., depression, self-reported substance abuse and delinquent acts, and teacher ratings) compared with their respective control groups (Felner and Adan, 1988).

Student Training Through Urban Strategies

Student Training Through Urban Strategies (STATUS) combines school environment change with classroom restructuring and education to establish stronger ties between youth and their communities. The program targets high-risk youth in middle/junior high and high schools. The school climate segment of the intervention consists of four components:

- A student leadership class that allows students to participate in school policymaking and problem solving.
- Staff development and training to support and facilitate students' efforts.
- Community action committees to provide resources and guidance to students.
- Parent meetings to increase awareness of school activities and allow parent participation in school decisionmaking.

In addition, STATUS students enroll in a yearlong "options" class, provided in a 2-hour block, that combines social studies and English and also involves law-related education. The class uses instructional methods emphasizing active student involvement and focuses on social institutions, such as the school, family, and criminal justice system, as well as on human behavior, social contracts, and social order. In high school, the curriculum also includes job market and life planning skills.

An evaluation of STATUS involved approximately 120 students in grades 7 to 9 in 2 schools who were self-referred or referred by school staff, and who were randomly assigned to treatment or control conditions. Shifting of students occurred after randomization due to scheduling difficulties and resulted in nonequivalent groups, but these differences were statistically controlled. Results showed less delinquency, less drug involvement for middle school students, less negative peer

influence, and better school performance and attitudes for participants compared to control students (Gottfredson, 1990).

School and Discipline Management

Like programs designed to change behavior norms or restructure the school environment, programs featuring school and discipline management interventions involve a comprehensive, schoolwide effort, with school climate change as a primary focus. Unlike other types of strategies, however, these interventions involve a more targeted focus on behavior management and school discipline practices. In addition, in contrast to many restructuring programs, they typically target all students within a particular school setting, rather than individual high-risk students. Many of these programs also strive to establish closer relationships between schools and communities by including parents, local leaders, and members of the community in the initiative.

Model Programs

None.

Promising Programs

Promoting Action Through Holistic Education

Promoting Action Through Holistic Education (PATHE) targets middle and high schools that serve students at risk of school failure and subsequent delinquency. The program generally involves all students in the school and provides additional treatment for low-achieving and disruptive students. This comprehensive intervention uses a number of strategies to effect schoolwide change. School improvement programs are designed and implemented through a partnership of staff, students, parents, and community members. Specific academic weaknesses and discipline problems in the school are identified and targeted for change through staff training and the creation of clear and fair rules. "School pride" campaigns, extracurricular activities to foster greater student engagement in the school, and peer counseling services are also used to promote a positive school climate. Finally, the school provides job-seeking skills training and offers career exploration programs to promote career development for the entire student body.

In addition to these schoolwide services and interventions, PATHE provides programming for at-risk students, including mentoring, tutoring, and counseling programs directed at improving students' self-concept, academic success, and bonding to prosocial norms (Gottfredson, 1990).

An outcome evaluation of the program used a nonequivalent comparison group design, with all teachers and students in five middle schools (four program and one comparison) and four high schools (three program and one comparison) in low-income, predominantly African American, urban and rural areas. Schools were the unit of analysis for the schoolwide intervention. To test the program's effect among a high-risk sample of students who were targeted for special academic and counseling services, a pool of students selected through teacher referrals and examination of academic and behavior referrals from each school were randomly assigned to treatment or control conditions. Overall, the evaluation demonstrated decreases in levels of serious delinquency, drug involvement, suspensions, and school disciplinary actions in the schools participating in the program. The results also indicated decreased school alienation, increases in attachment to school, and improvements in school climate and discipline management. The high-risk youth sample had higher graduation rates, higher standardized test scores, and increased school attendance, but showed no change in delinquency; self-reported drug involvement was higher for the treatment group. These results suggest that the mentoring, tutoring, and counseling components directed at high-risk students were not enough to change problem behaviors (Gottfredson, 1990).

Classroom or Instructional Management

Prevention and intervention strategies focusing on classroom management generally combine teacher training in effective instructional and disciplinary practices with student training. Ultimately, the goal of such strategies is to equip teachers with the necessary skills to positively manage student behavior. Generally, these approaches involve the entire school population rather than just the high-risk students (Thornton et al., 2000). However, the interventions are often designed to be implemented in at-risk schools, such as those located in large urban areas or that have histories of student behavior and learning problems.

Model Programs

None.

Promising Programs

Seattle Social Development Project

The Seattle Social Development Project is a long-term intervention for grades one through six that combines parent and teacher training to intervene early in a child's development to foster prosocial bonds, strengthen school attachment and commitment, and decrease youth delinquency. The program is based on social control and social learning theories. Teachers receive training in proactive classroom management techniques, and in interactive teaching and cooperative learning styles. These strategies are focused on establishing clear rules and rewards for positive behavior. Teachers are encouraged to frequently assess each child to ensure that he or she is learning and to remediate where necessary. Additionally, students are encouraged to work in small, diverse groups to promote healthy relationships with peers. In first grade, teachers also provide instruction in communication, decisionmaking, negotiation, and conflict resolution skills. The sixth grade curriculum includes refusal skills training (Hawkins et al., 1992).

Throughout the program, parents can participate in parent training and child development sessions that are age specific. For example, parents of children in first and second grades receive training in child monitoring and discipline techniques. The second and third grade parents are offered sessions geared toward parent-child communication, school engagement, and support for their child's academic progress. In fifth and sixth grades, sessions focus on family communication regarding drugs and encouraging refusal skills (Hawkins et al., 1992).

The evaluation of the project included two Seattle elementary schools assigned as full control or full experimental sites. In the remaining six elementary schools in the district, entering first grade students and teachers were randomly assigned to intervention or control classrooms. During grades one through four, newly entering students were randomly assigned to classrooms. When the initial students entered the fifth grade, the panel was expanded to include all fifth grade students in 18 elementary schools.

Results indicated that, by the end of the second grade, participating students exhibited lower levels of aggression and antisocial behaviors (white males only) and lower levels of self-destructive behavior (white females only) (Hawkins, Von Cleve, and Catalano, 1991). Older students (those entering fifth grade) who received the intervention were less likely to begin using alcohol and engaging in delinquent behavior, and had increases in school attachment and

improved family relationships, compared with students in the control group (Hawkins et al., 1992). At age 18, students who had participated in the project from grades one through six, compared with students in the control group and students who had received the program in grades five and six only, had less involvement in violent delinquency and sexual activity, less alcohol use (including drinking and driving behavior), improved attachment and commitment to school, and improved school achievement compared with students in the control group (Hawkins et al., 1999).

Changing the Community Environment

Communities represent a primary domain in which to address the problems of youth violence and drug abuse. Families and schools do not exist in a vacuum, and much of the success of these institutions is influenced by the communities in which they exist. Although most communities are cohesive and contain various channels for positive youth development, others are disorganized, economically deprived or deteriorated, and have high levels of unemployment and mobility and low levels of neighborhood attachment and natural surveillance of public places. Although crime occurs in all communities, it is especially problematic in these socioeconomically deprived areas.

Numerous challenges arise when communities plan and develop initiatives for tackling their crime problems. The first challenge is to mobilize the community (including community leaders and residents, government agencies, and private organizations such as businesses and churches), which is especially difficult when it is highly disorganized. The second challenge lies in identifying and sustaining effective leadership and organizational structure. Third, garnering necessary resources is oftentimes problematic. Fourth, numerous challenges arise when trying to coordinate multiple program efforts across several agencies. A sustained and successful effort requires a common purpose and the coordinated efforts of many individuals and groups (U.S. Department of Health and Human Services, 1993).

Evaluations of community-based programs using an acceptable methodology are limited because of the extreme difficulty associated with this work (Sherman, 1997a). Evaluating risk factors across a substantial sample of communities has generally been considered too cost prohibitive by funders. An additional problem is that community-based efforts generally implement multiple programs at the same time, and isolating the active ingredients that cause success is difficult.

Because of the problems in both implementing and evaluating community-based initiatives, few programs at this level have been identified.

Model Programs

None.

Promising Programs

CASASTART

CASASTART, formerly known as the Children At Risk (CAR) program, targets youth in high-risk environments to reduce their exposure to drugs and criminal activities. Those participating in a demonstration trial were ages 11–13 and met the criteria for being at risk in school, in the family, and individually.

CASASTART tries to decrease individual, peer group, family, and neighborhood risk factors through case management services, afterschool and summer activities, and increased police involvement. The program also works to improve children's attachment to adults, attachment to prosocial norms, school performance, and participation in prosocial activities/peer groups. These goals are achieved through the implementation of eight core components, which target different areas of risk, including the family, peer group, individual, and community:

- Community-enhanced policing/enhanced enforcement: increased police presence and involvement in the community and working with youth.

- Case management: small caseloads (13–18 families) ensure close and personalized attention to youth and their families, as well as implementation of plans targeting individual needs.

- Criminal/juvenile justice intervention: communication between case managers and juvenile justice and probation departments enhances supervision and planning for court-involved youth.

- Family services: parent programs, counseling services, organized activities, and family advocacy by case managers increase positive involvement of parents in the lives of their children.

- Afterschool and summer activities: prosocial, peer-oriented activities are implemented, including not only recreation and entertainment programs, but also personal social development projects, particularly those directed at self-esteem, cultural heritage, and social problems.

- Education services: tutoring, homework assistance, and work preparation opportunities are offered to strengthen individual skills.

- Mentoring: group or one-to-one mentoring relationships promote positive behaviors.

- Incentives: monetary and nonmonetary incentives are given for participation in CASASTART activities.

Five cities participated in the evaluation—Austin, TX; Bridgeport, CT; Memphis, TN; Savannah, GA; and Seattle, WA—and all had neighborhoods with high rates of poverty, crime, and drug dealing. Eligible youth from these areas were identified by case managers, schools, and courts and were randomly assigned to treatment (n=338) or control groups (n=333). Quasi-experimental neighborhoods (matched to the original CAR neighborhoods) and youth were also chosen because control group youth in the CAR sites were exposed to spillover effects. This last group consisted of 203 youth identified by CASASTART staff, schools, and cooperating agencies.

The evaluation demonstrated that, immediately following the program, experimental youth had lower rates of drug use in the past month, lifetime use of gateway drugs, and any drug use, compared with the quasi-experimental group composed of matched neighborhoods and youth. At the 1-year followup, CASASTART youth were less likely than a control group of youth to report use of any drugs, gateway drugs, or stronger drugs in the past month; use of any drugs and gateway drugs in the past year; drug sales during the last month and lifetime; and violent crimes in the past year. Compared with the quasi-experimental group, CASASTART youth were less likely to report lifetime use of any drugs or gateway drugs and were less likely to report lifetime drug sales (Harrell, Cavanagh, and Sridharan 1998).

Individually Focused Programs

The most common form of intervention targets individuals in order to promote social competencies and/or ameliorate deficits in troubled adolescents. As opposed to focusing on unhealthy environments (as exemplified in the school environmental programs described above), individually focused interventions attempt to change a person's thoughts, beliefs, attitudes, or behaviors. Many multicomponent programs, however, address both issues and incorporate environmental and individually focused strategies in the intervention, with great success (Lipsey, 1992). The individually focused programs are grouped into three categories:

- Social skills, behavioral, and cognitive-behavioral programs.
- Mentoring and tutoring programs.
- Community supervision and aftercare programs.

Programs in each of these categories are described below.

Social Skills, Behavioral, and Cognitive-Behavioral Programs

Teaching youth self-control and social skills enables them to competently interact with others and resolve problems without force or violence. These skills are typically taught through programs using behavioral or cognitive-behavioral techniques.

Behavioral programs focus on rewarding desired behavior and providing mild forms of punishment for undesired behavior. These interventions rely on external reinforcers (e.g., contingency contracting, token economies) to shape behavior.

Cognitive skills programs, on the other hand, focus on thinking skills and the ways in which individuals process social information (Fraser, 1996). The cognitive approach seeks to improve a child's ability to think through a problem situation, identify consequences of a certain action, and evaluate and generate optional solutions to problems, with repeated emphasis on the links between thought and action. Cognitive approaches typically combine some behavioral strategies (cognitive-behavioral approach), especially when targeting antisocial or delinquent youth to promote prosocial behavior. The assumption is that by changing internal factors (i.e., cognition),

as opposed to purely external factors (i.e., reinforcement contingencies), the behavior will be learned and generalized to everyday situations (Tolan and Guerra, 1994).

Cognitive-behavioral programs are similar to the social skills building programs that use behavioral and cognitive techniques; however, the former are typically delivered to small groups of at-risk adolescents or youth already displaying behavioral problems, rather than to a general population of students. The programs work intensely with these youth to change behavior by using behavioral techniques of punishments and rewards or by altering deficiencies in thinking skills. This strategy is based on the premise that delinquent youth, who generally score lower on cognitive tests than their nondelinquent peers (Henggeler, 1989), are deficient in a number of thinking and social problem-solving skills necessary for social adaptation. For instance, many delinquent youth have the following characteristics (Kazdin, 2000; Ross and Ross, 1989; Spivack, Platt, and Shure, 1976):

- They act impulsively, giving little thought to their actions and generating few alternative solutions to interpersonal problems.
- They believe that what happens to them depends on fate, chance, or luck, and fail to see the consequences of their own actions.
- They focus on ends or goals rather than the intermediate steps to obtain them.
- They exhibit a rigid or concrete thinking style, which makes it difficult for them to understand the reasons for rules or laws.
- They lack thinking skills required for solving problems and interacting with others.
- They misinterpret the actions and intentions of others.

The development of cognitive skills helps youth to successfully adapt to their environment and reduces the likelihood that they will adopt a criminal lifestyle.

Social and cognitive skills are learned skills that are greatly influenced by environmental factors (Ross and Ross, 1989). For example, extreme poverty may impede the successful development of cognitive skills, as economically deprived neighborhoods tend to be more disorganized and

provide less social control over residents, i.e., there may be fewer adults or peers to model effective problem-solving strategies. Inadequate or coercive parental supervision and discipline, abuse, or neglect may also have a retarding effect on the development of cognitive skills in general, and social perspective taking and empathetic understanding in particular. Children who are disciplined in a controlling, erratic, or excessively punitive manner may perceive that they have little control over their own environment; fail to learn adequate problem-solving skills; believe that what happens to them is not dependent on their behavior; and are especially likely to act aggressively because of their inability to solve problems and satisfy needs in a more socially acceptable way. Parents with a history of criminal behavior, substance use, or depression may model cognitive deficits, such as lack of self-management or ineffectual problem-solving, ultimately resulting in cognitive deficits in their children.

Many effective programs use social and cognitive skills training approaches, and these types of interventions have been shown to reduce crime, substance use, school dropout and truancy, and other antisocial behavior and conduct problems (Gottfredson, Wilson, and Najaka, 2002). Social skills programs have typically been offered to general and at-risk populations (Davis and Tolan, 1993). They have also been effectively delivered at different developmental stages, including preschool, elementary, junior high, and senior high school (Gottfredson, Wilson, Najaka, 2002). Cognitive programs, however, have been more beneficial for those older than ages 10–11 because of their more advanced stage of cognitive development (Kazdin, 2000). These programs are typically multifaceted and include elements of modeling, behavioral rehearsal (practiced role-playing), feedback, social reinforcement, and mild punishment (loss of points or tokens) (Kazdin, 1987; Sarason and Sarason, 1981). Although cognitive development strategies have been offered as primary prevention programs, and in treatment and correctional settings, they work less well for conduct-disordered children who have co-morbid diagnoses, academic delays and dysfunction, and lower reading achievement and who come from families with high levels of impairment (Kazdin, 2000).

Other approaches in this general area attempt to reduce children's misconduct by modifying their parents' behavior, with the overall goal of altering the pattern of familial interchanges so that prosocial, rather than coercive, behavior is reinforced and supported within the family (Kazdin, 2000; Ross and Ross, 1989). Parents are taught to establish a consistent set of rules and provide reinforcements for prosocial behaviors as well as mild forms of punishment to suppress negative behaviors. Parents are also taught social skills such as communication, contracting, and problem

solving. Children thus develop better cognitive strategies and social skills by observing how their own parents deal with problem-solving issues.

Model Programs

Promoting Alternative Thinking Strategies

Promoting Alternative Thinking Strategies (PATHS) is a comprehensive program for promoting social and emotional competencies, including the understanding, expression, and regulation of emotions. The curriculum is designed for use by teachers and counselors throughout the year, with entire classrooms of children in kindergarten through fifth grade. PATHS has been researched with children in regular education classrooms and also with a variety of special needs students (e.g., deaf, hearing impaired, learning disabled, emotionally disturbed, mildly mentally delayed, and gifted). The curriculum provides teachers with systematic, developmentally based lessons, materials, and instructions for teaching their students emotional literacy, self-control, social competence, positive peer relations, and interpersonal problem-solving skills. More specifically, lessons include instruction in identifying and labeling feelings, expressing feelings, assessing the intensity of feelings, managing feelings, understanding the difference between feelings and behaviors, delaying gratification, controlling impulses, reducing stress, using self-talk, reading and interpreting social cues, understanding the perspectives of others, using steps for problem solving and decisionmaking, having a positive attitude toward life, increasing self-awareness, and enhancing verbal and nonverbal communication skills.

Focusing on these factors provides tools that enable youth to achieve academically and helps enhance classroom atmosphere and the learning process. In addition, promoting these developmental skills helps prevent or reduce behavioral and emotional problems. In fact, program evaluations based on various measures (such as teacher ratings and children's self reports) have demonstrated positive behavioral changes related to hyperactivity, peer aggression, and conduct problems (Greenberg, Kusche, and Mihalic, 1998). Using populations of normally adjusted students, behaviorally at-risk students, and deaf students, these effects also have been found for classrooms receiving the intervention compared with matched controls.

Life Skills Training

Life Skills Training (LST) is a 3-year intervention curriculum designed to prevent or reduce gateway drug use (tobacco, alcohol, and marijuana) by providing social resistance skills training to help students identify pressures to use drugs and resist drug offers (Dusenbury and Falco, 1995). LST is primarily meant to be implemented in school classrooms by teachers, but has also been successfully taught by health professionals and peer leaders. LST targets all middle/junior high school students, with an initial 15-lesson intervention offered in grade 6 or 7, depending on the school structure, and booster sessions taught in the following 2 years (10 sessions in year 2 and 5 sessions in year 3). Lessons average 45 minutes in length and can be delivered from once a day to once a week.

The three basic components of the program teach youth the following skills:

- Personal self-management skills (decisionmaking and problem solving, self-control skills for coping with anxiety, and self-improvement skills).

- Social skills (communication and general social skills).

- Information designed to effect youth's attitudes concerning drug use, to instill normative expectations concerning drugs, and to promote the development of skills for resisting negative influences from the media and peers regarding drug use.

Teachers use techniques such as direct instruction, demonstration, feedback, reinforcement, and practice.

Using outcomes averaged across more than a dozen studies, LST has been found to reduce alcohol, tobacco, and marijuana use by 50 to 75 percent for intervention students compared to control students. Reductions in smoking and the use of inhalants, narcotics, and hallucinogens have been demonstrated through the 12th grade (Botvin, Mihalic, and Grotpeter, 1998).

Project Towards No Drug Abuse

Project Towards No Drug Abuse (Project TND) is a targeted drug abuse prevention program with a focus on high school youth (ages 14 to 19) who are at risk for drug abuse.

The 12 classroom-based lessons, approximately 40 to 50 minutes each, are designed to be implemented over a 4-week period, although they could be spread out over as long as 5 weeks on the condition that all lessons are taught. The instruction to students provides cognitive motivation enhancement activities (to not use drugs), detailed information about the social and health consequences of drug use, correction of cognitive misperceptions and addresses topics including instruction in active listening, effective communication skills, stress management, coping skills, tobacco cessation techniques and self-control to counteract risk factors for drug abuse relevant to older teens.

Project TND has been tested in three true experimental field trials, involving one or two program conditions that were compared to a standard care control condition. A total of 3,000 youth from 42 schools were involved across the three trials. At 1-year followup relative to comparisons, participants who received the 12-session program experienced: a 27 percent prevalence reduction in 30-day cigarette use, a 22 percent prevalence reduction in 30-day marijuana use, a 26 percent prevalence reduction in 30-day hard drug use, a 9 percent prevalence reduction in 30-day alcohol use among baseline drinkers, and a 25 percent prevalence reduction in 1-year weapons carrying among males.

Promising Programs

I Can Problem Solve

I Can Problem Solve (ICPS) trains children to generate a variety of solutions to interpersonal problems, consider the consequences of these solutions, and recognize thoughts, feelings, and motives that create problem situations. By teaching children to think, rather than what to think, the program changes thinking styles and, in turn, enhances children's social adjustment, promotes prosocial behavior, and decreases impulsivity and inhibition. The program was originally designed for use in nursery school and kindergarten, but has also been successfully implemented with children in grades five and six.

Throughout the intervention, instructors use pictures, role-playing, puppets, and group interaction to help develop students' thinking skills, and children's own lives and problems are used as examples when teachers demonstrate problem-solving techniques. Small groups of 6–10 children receive training for approximately 3 months. The intervention begins with 10 to 12 lessons focused on basic skills and problem-solving language. The next 20 lessons help students identify

their feelings and become sensitive to others' emotions, so that they learn to recognize people's feelings in problem situations and realize that they can influence others' responses. The last 15 lessons use role-playing games and dialogue to promote problem-solving skills. Students generate solutions to hypothetical problem situations and consider the possible consequences of their decisions.

A 2-year evaluation of ICPS revealed significant benefits for intervention students. The first year of the intervention involved 219 African American students attending 20 federally funded daycare centers (10 centers were given the intervention and 10 were used as a control group). There were 131 students remaining in the second year, who were further divided to receive, or not receive, a second year of the program. Immediately following and 1 year after the program ended, ICPS children, compared with control students, demonstrated less impulsive (including aggression) classroom behavior, less inhibited classroom behavior, and better problem-solving skills (Shure and Spivack, 1980; 1982). Additional analyses compared students receiving 1 and 2 years of interventions. The results showed that students receiving 2 years had the highest scores in generating alternative solutions, followed by students trained for 1 year, and then control students. However, the second year of training made no difference in terms of behavior ratings; 1 year was sufficient to produce adequate behavioral adjustment.

A replication with fifth and sixth grade students found that ICPS children (n=222), compared with a treatment group that received training in critical thinking skills (n=97), demonstrated more positive, prosocial behaviors, healthier relationships with peers, and better problem-solving skills at the end of grade five (Shure and Healey, 1993). At the end of grade six, all ICPS students achieved greater gains in ICPS skills than those in the control group, and the group receiving 2 years of training was superior in all positive behaviors as measured by teachers, peers, and independent observers.

Preventive Treatment Program

The Preventive Treatment Program is designed to prevent antisocial behavior in boys who display early problem behavior. This 2-year program combines parent training with social skills training for youth to decrease delinquency, substance use, and gang involvement. The intervention has been successfully implemented for white, Canadian-born males, ages 7–9, from low-socioeconomic families, who were assessed as having high levels of disruptive behavior in kindergarten. During intervention, parents receive an average of 17 sessions that focus on

monitoring their children's behavior, giving positive reinforcement for prosocial behavior, using punishment effectively, and managing family crises. The boys receive 19 sessions directed at improving prosocial skills and self-control. The training is implemented in small groups containing both disruptive and nondisruptive boys, and it uses coaching, peer modeling, self-instruction, reinforcement, and role-playing to build skills.

The program evaluation included boys who were rated by their teachers as highly disruptive at the end of kindergarten. Of the 1,161 boys from 53 schools who were nominated, 249 met the selection criteria and were randomly assigned (before the others were eliminated because of failure to meet the selection criteria) to one of three groups:

- A treatment group (46 families after selection screening and giving consent to participate in the study).

- A no-treatment contact group (84 families).

- A no-treatment, no-contact control group (42 families).

Intervention youth demonstrated both short-term and long-term gains. At age 12, 3 years after the intervention, treated boys were less likely than untreated boys in the two control groups to report trespassing, taking objects worth less than $10, taking objects worth more than $10, and stealing bicycles. Treated boys were rated by teachers as fighting less than the untreated boys (control groups combined). Also, 29 percent of the treated boys were rated as well-adjusted in school, compared with 19 percent of the untreated boys; 22 percent of the treated boys, compared with 44 percent of the untreated boys, displayed less serious difficulties in school; and 23 percent of the treated boys, compared with 43 percent of the untreated boys, were held back in school or placed in special education classes. At age 15, those receiving the intervention were less likely than controls to report gang involvement; having been drunk or taken drugs in the past 12 months; committing delinquent acts (stealing, vandalism, drug use); and having friends arrested by the police (Tremblay et al., 1996; Tremblay et al., 1992; Tremblay et al., 1991).

Good Behavior Game

The Good Behavior Game (GBG) is a behavior modification program taught by classroom teachers and is directed at decreasing early aggressive and shy behaviors to prevent later

criminality. GBG can be applied to general populations of early elementary school children (i.e., it is a universal program), although the most significant results have been found for children demonstrating early high-risk behavior. GBG improves teachers' abilities to define tasks, set rules, and discipline students, and allows students to work in teams in which each individual is responsible to the rest of the group. Before the game begins, teachers clearly specify those disruptive behaviors (e.g., verbal and physical disruptions, noncompliance) that, if displayed, will result in a team's receiving a checkmark on the board. By the end of the game, teams that have not exceeded the maximum number of marks are rewarded, whereas teams that exceed this standard receive no rewards. Eventually, the teacher begins the game with no warning and at different periods during the day, so that students are always monitoring their behavior and conforming to expectations.

The evaluation of this program included 1,084 first grade children from 19 schools in 5 urban areas of Baltimore. Three or four most similar schools were matched within each of the urban areas and assigned to one of two treatments (GBG or a Mastery Learning program targeting reading skills) or to a control condition. Classrooms within each school were randomly assigned as either an intervention or control class (receiving no intervention). Children entering first grade were then randomly assigned to classrooms. At the end of first grade, GBG students, compared to a control group, had less aggressive and shy behaviors according to teachers and fewer peer reports of aggressive behavior. Additionally, the alternative treatment, Mastery Learning, produced a significant short-term impact on reading achievement for both males and females. At the end of sixth grade, GBG students, compared to a control group, demonstrated decreases in levels of aggression for males who were rated as highly aggressive in first grade (Kellam et al., 1994).

Fast Track

Fast Track is a comprehensive and long-term program that seeks to prevent chronic and severe conduct problems for high-risk children. It is based on the theory that antisocial behavior stems from the interaction of multiple influences, and it includes the school, home, and individual in its intervention. Fast Track's main goals are to increase communication and bonds among these three domains; enhance children's social, cognitive, and problem-solving skills; improve peer relationships; and ultimately decrease disruptive behavior in the home and school. Although the primary intervention is designed for all youth in a school setting, Fast Track specifically targets children identified in kindergarten as exhibiting disruptive behavior and poor peer relations. The

program spans grades 1 through 10, but is most intense during the key periods of entry into school (first grade) and transition from grade school to middle school. It is multidimensional and includes the following components:

- Parent training occurs in first grade and emphasizes fostering children's academic performance, communicating with the school, controlling anger, and using effective discipline strategies.

- Home visitations occur biweekly to reinforce parenting skills, promote parents' feelings of efficacy and empowerment, and foster parents' problem-solving skills.

- Social skills training enhances children's social-cognitive and problem-solving skills, peer relations, anger control, and friendship maintenance.

- Academic tutoring is offered three times per week to improve children's reading skills.

- A universal classroom intervention utilizes the PATHS curriculum, a program designed to help children in grades one through five develop emotional awareness skills, self-control, and problem-solving skills.

The evaluation of the program included 6,715 first graders from 12 elementary schools in high-risk neighborhoods (those with high levels of delinquency and juvenile arrests) in the following areas: Durham, NC; Nashville, TN; Seattle, WA; and central Pennsylvania. Most of the sites were characterized by ethnic diversity and low- to middle-socioeconomic standing. All participating schools were placed in matched sets based on their similar characteristics (i.e., racial makeup, size, poverty level, and achievement level). Schools within each set were then randomly assigned to treatment and control groups.

Results have been published only for a first grade sample in which three different cohorts were examined. Consent was obtained to study 7,560 students. Of these, 845 were designated as high-risk and assigned to intervention and control groups, to be studied as a separate group. Thus, the first analysis of classroom effects involved 6,715 children, with the evaluation demonstrating that intervention classes displayed lower levels of aggression, improved classroom atmosphere, decreases in hyperactive-disruptive behavior, and fewer conduct problems compared with control classes (Conduct Problems Prevention Group, 1999). An analysis of the high-risk sample showed

that intervention students, compared with control students, demonstrated improved emotional recognition, emotional coping, and social problem solving; decreases in levels of aggressive retaliation; and improvement in aggressive-disruptive behaviors on 4 of 12 measures (Conduct Problems Prevention Group, 1999).

Linking the Interests of Families and Teachers

Linking the Interests of Families and Teachers (LIFT) is a population-based intervention for the prevention of conduct problems such as antisocial behavior, involvement with delinquent peers, and drug/alcohol use. The program is designed for elementary school-age children and their families living in at-risk neighborhoods characterized by high rates of juvenile delinquency. LIFT targets the school, peer group, and family through the following program components:

- A classroom component has twenty 1-hour sessions taught over 10 weeks using a lecture and role-play format that focuses on specific social or problem-solving skills, unstructured free play, skills review, and daily rewards.

- A modification of the Good Behavior Game is used during recess. Each class is divided into small groups for playground play. Children can earn rewards by exhibiting positive problem-solving skills and suppressing negative behaviors in this setting.

- In a series of six meetings held at their children's school, parents are taught how to create a home environment that is conducive to the ongoing practice of good discipline and supervision. Each meeting includes a review of the results of home practice exercises; a lecture, discussion, and role-play of the current week's issues; and a presentation of home practice exercises for the following week.

The evaluation involved 12 schools randomly assigned to LIFT or a control condition, with first and fifth grade classrooms also randomly chosen for participation. Measurements were collected during the fall and spring of each year for 3 years. Evaluation of posttest results (Reid et al., 1999) showed that, compared with children in the control group, LIFT children showed significantly decreased physical aggression on the playground and these effects were most dramatic for children who were rated most aggressive at pretest. Teacher ratings indicated a significant increase in positive social skills and classroom behavior in children receiving the LIFT program. Additionally, LIFT mothers who displayed the highest pre-intervention levels of aversive behaviors showed the largest reductions when compared with control mothers. After 3

years, fifth grade children in the control group were 2.2 times more likely to initiate affiliation with misbehaving peers and 1.8 times more likely to initiate patterned alcohol use than LIFT children. Intervention children in the first grade sample were less likely to show an increase in inattentive, impulsive, and hyperactive behaviors, as perceived by teachers (Eddy, Reid, and Fetrow, 2000).

Preventive Intervention

Preventive Intervention is a behavioral intervention that helps prevent juvenile delinquency, substance use, and school failure for high-risk adolescents. The 2-year intervention begins in seventh grade and includes monitoring student actions, rewarding appropriate behavior, and increasing communication among teachers, students, and parents. Program staff check school records for participants' daily attendance, tardiness, and official disciplinary actions, and they contact parents by letter, phone, and occasional home visits to inform them of their children's progress. Teachers submit weekly reports assessing students' punctuality, preparedness, and behavior in the classroom, and students are rewarded for good evaluations. Each week, 3–5 students meet with a staff member to discuss their recent behaviors, discuss the relationship between actions and their consequences, and role-play prosocial alternatives to problem behaviors.

The program evaluation included 2 sets of 40 students from 2 schools who demonstrated at least 2 of the following characteristics: low academic motivation, family problems, and frequent or serious school discipline referrals. These students were matched into 20 pairs and randomly assigned to treatment or control conditions. At the end of the intervention, program students showed higher grades and better attendance compared with control students (Bry and George, 1980). Results from a 1-year followup study showed that intervention students, compared with control students, had less self-reported delinquency, drug abuse (including hallucinogens, stimulants, glue, tranquilizers, and barbiturates), school-based problems (suspension, absenteeism, tardiness, academic failure), and unemployment (20 percent and 45 percent, respectively). A 5-year followup found that intervention students had fewer county court records than control students (Bry, 1982).

Mentoring and Tutoring Programs

Other individually based programs focusing on one-to-one mentoring or tutoring, with youth typically paired with an adult or older adolescent, may be used to build interpersonal, school, or employment skills. These programs generally target students at high risk of school failure or dropout and are designed to provide more intensive and individualized support than interventions delivered at the school or classroom level. Mentoring is based on the premise that a predictable, consistent relationship with a stable, competent adult can help youth to cope with and avoid a high-risk lifestyle. Tutoring programs strive to overcome risk factors, such as early school failure and a lack of bonding to school, by providing intensive efforts to remediate academic deficiencies. Evaluations of these program types have yielded mixed results (Brewer et al., 1995).

Model Programs

Big Brothers Big Sisters of America

Big Brothers Big Sisters of America (BBBSA), with a network of more than 500 local agencies throughout the nation, maintaining more than 145,000 one-to-one relationships between youth and volunteer adults, operates as the largest and best-known mentoring program in the country. BBBSA began in the early 20th century by targeting youth in need of socialization, firm guidance, and connection with positive adult role models. Today, the program serves youth ages 6–18, a significant number of whom are from disadvantaged, single-parent households. Volunteer mentors are screened and trained, and matches are carefully made using established procedures and criteria. Mentors meet with youth partners at least three times a month for 3 to 5 hours to participate in activities determined by the interests of the child and the volunteer, such as taking a walk, attending a school activity or sporting event, playing a game, visiting the library, or just sharing thoughts and ideas about life. The program's hallmark is the supervision of the match relationship, which includes regular, scheduled visits and phone conversations among the mentor, the parent, and the child.

An 18-month evaluation of eight BBBSA affiliates found that, compared with a control group waiting for a match, youth in the mentoring program were 46 percent less likely to start using drugs, 27 percent less likely to start drinking, and 32 percent less likely to hit someone. Mentored youth also skipped half as many days of school as control youth, had better attitudes and

performance in school, and had improved peer and family relationships (McGill, Mihalic, and Grotpeter, 1997).

Promising Programs

None.

Community Supervision and Aftercare Programs

When treating youth already engaged in problem behaviors (i.e., "indicated" youth), some programs provide aftercare and transitional services to juveniles following a period of incarceration, while others offer treatment to less serious offenders who are diverted from the juvenile justice system. Regardless of the strategy used, meta-analyses indicate that reductions in recidivism are greater when treatment is provided in community settings rather than in institutions (Lipsey, 1992). In addition, although many programs offer increased surveillance and restraint along with treatment, in general, recidivism is reduced only when services and rehabilitation are an integral part of the intervention (MacKenzie, 1997).

Model Programs

Multidimensional Treatment Foster Care

Multidimensional Treatment Foster Care (MTFC) is a cost-effective alternative to group or residential treatment, incarceration, and hospitalization for adolescents who have problems with chronic antisocial behavior, emotional disturbance, and delinquency. MTFC provides short-term (approximately 7 months), highly structured and therapeutic care in foster families to decrease delinquent behavior and increase participation in developmentally appropriate prosocial activities, including school, sports, and hobbies. The program recruits, trains, and supervises foster families in the community to provide participating youth with close supervision, fair and consistent limits, predictable consequences for rule-breaking, a supportive relationship with an adult, and an environment that reduces exposure to delinquent peers.

Youth participate in individual, skills-focused therapy provided weekly. The role of the therapist is to support the youngster's adjustment in the MTFC home where the main treatment effect is

expected to occur. School attendance, behavior, and homework completion are closely monitored, and interventions are conducted as needed for youth in the schools.

Youth also participate in a structured daily behavior management program implemented in the MTFC home. A case manager, with the help of the MTFC parents, develops an individualized daily program for each youth that specifies the youth's schedule of activities and behavioral expectations and sets the number of points he or she can earn for satisfactory performance. The goal of the point program is to give MTFC parents a vehicle for providing the youngster with frequent positive reinforcement for normative and prosocial behaviors, and to give the youngster a clear message about how he or she is doing. Three levels of supervision are defined in MTFC:

- Level 1 requires adult supervision at all times.
- Level 2 grants youth limited free time in the community.
- Level 3 allows for some peer activities that require less structure.

The program relies on routine consultation with and ongoing supervision of MTFC parents and youth by case managers. Parents are called daily for a report on the youth's progress, and they also attend weekly group meetings. This ongoing consultation helps the MTFC parents to manage difficult adolescent problem behavior in a therapeutic way.

Family therapy is provided for the youth's biological (or adoptive) families in either a group or individual format. Family therapy typically includes a focus on problem solving and communication skills, methods for de-escalating family conflict, and instruction on how to advocate for school services for the youth. They are also taught to use the same type of structured supervision used in the MTFC home to increase the likelihood of success when the youth returns home.

Evaluations of MTFC demonstrate that participating youth had significantly fewer arrests (an average of 2.6 offenses versus 5.4 offenses) during a 12-month followup compared with a control group of youth who participated in residential group care programs. During the first 2 years after program completion, youth who participated in the MTFC program spent significantly fewer days in lockup than youth who were placed in other community-based programs. In addition, significantly fewer MTFC youth were ever incarcerated following treatment (Chamberlain, 1990). An additional evaluation of youth ages 9–18 leaving state mental hospital settings showed that

MTFC youth were placed out of the hospital at a significantly higher rate than control youth (Chamberlain and Mihalic, 1998).

Promising Programs

Intensive Protective Supervision

Intensive Protective Supervision (IPS) removes juvenile offenders from criminal justice institutions and provides them with more proactive and extensive community supervision than they would otherwise receive. Its primary goals are to reduce status offenses, decrease the likelihood of future serious delinquency, and increase socially acceptable behaviors. This program has specifically targeted youth under age 16 who have been adjudicated as status offenders and who tend to be nonserious offenders with little history of delinquency.

Offenders assigned to IPS are closely monitored by project counselors who have fewer cases and interact more extensively with the youth and his/her family than do traditional parole officers. The counselors make frequent home visits to assess family and youth needs, provide support for parents, and model appropriate behavior. In doing so, they provide external expert evaluation, which includes creating individualized plans to effect desired behavioral changes, and they identify and help deliver professional and/or therapeutic services. Youth assessments, needs, and goals are viewed as ongoing and changing.

The program has demonstrated both short-term and long-term reductions in juvenile offending for participants in an evaluation comparing youth randomly assigned to IPS with those assigned to regular protective supervision. IPS youth were referred less frequently than control youth to juvenile court for delinquency during the period of supervision (7 percent compared with 26 percent). Additionally, 65 percent of IPS youth compared with 45 percent of the control group were judged to have successfully completed treatment. One year after case closing, 3 times as many of the control group youth as IPS participants (35 percent versus 14 percent) were referred to juvenile court for delinquency (Land, McCall, and Williams, 1992).

Conclusion

In light of an increasing demand for accountability, efforts to identify effective violence and drug prevention programs are intensifying. Despite the time and attention devoted to this issue, the majority of programs currently being implemented have not been proven effective by evaluations conducted with a rigorous research design. In fact, many evaluations fail to meet even minimal criteria needed to demonstrate results, and even fewer employ randomized designs, the gold standard of research design. As a result, such programs cannot rule out alternative explanations for any demonstrated positive results, which weakens confidence in their findings. In contrast, by maintaining very high standards when reviewing an extensive body of prevention literature, the Blueprints initiative has provided answers to many of the questions regarding what works and does not work in violence, delinquency, and substance abuse prevention.

The programs meeting the Blueprints criteria suggest that intervening early in the developmental life course is critical for interrupting negative socialization processes that may place a child on a path that may involve antisocial behavior, dropping out of school, and poor adult socialization. The program that intervenes the earliest during the life course, Nurse-Family Partnership, targets mothers during pregnancy to improve health risks that may jeopardize their infant's development. After the pregnancy, practitioners continue to work with mothers to help them create a home environment that nurtures their child's ongoing successful development. Other early childhood programs are directed at improving cognitive and academic performance. These interventions are based on the premise that early success and enhanced school readiness help children achieve a more successful transition to school and places them on a positive developmental path. For many children participating in these programs, success continues into adolescence and is demonstrated by reductions in problem behaviors such as fighting, delinquency, arrests, and disruptive and hostile acts, even up to 10 years after program completion. The longest followup of this type of program, an evaluation of the High/Scope Perry Preschool, demonstrates that, at age 27, children who received the intervention were more successful than the control children in navigating the transition into adulthood.

Programs that focus on the home environment, such as parent training and family therapy, have been successful in modifying poor parenting practices and improving family communication and interaction patterns that contribute to violence, delinquency, and substance abuse. Parenting programs, typically targeting the families of young (through middle school) and high-risk children,

have demonstrated effectiveness in reducing early forms of aggression and also drug use in adolescence, and have been shown to improve the quality of the parent-child relationship. Family therapy, used with at-risk families or families with children already displaying problems, has enhanced family functioning and reduced problem behaviors, including delinquency and violence.

The school environment is another important locus of change, as it can contribute to children's violence and delinquency. Interventions demonstrating reductions in school-related problem behaviors, delinquency, and drug use include comprehensive, schoolwide programs that create supportive environments for teachers, staff, and students; emphasize organization and open lines of communication; create and reinforce academic and disciplinary policies that promote prosocial norms; and instruct teachers in techniques of effective classroom management. Additionally, schoolwide improvement efforts promote a positive school climate and help to improve academic performance.

Individually focused programs that teach students self-control, social, and problem-solving skills are also very effective. The Blueprints programs that focus on these skills-building techniques target universal and selected (at-risk) audiences. However, two meta-analyses (Lipsey, 1992; Lipsey and Wilson, 1998) also demonstrate the importance of these programs for juvenile offenders both in and out of the juvenile justice system. Each meta-analysis identified behavioral and skills-building programs as among the most effective of all the strategies reviewed.

The literature contains mixed findings with regard to mentoring and tutoring programs. One review of 10 mentoring programs indicates that, although they may have some impact on improving school attendance and academic achievement, they do not reduce problem behavior (Brewer et al., 1995; Thompson and Kelly-Vance, 2001). The mentoring and tutoring programs identified by Blueprints are more comprehensive than those programs reviewed, however. The only strictly mentoring program included in Blueprints that has, based on a strong evaluation, achieved reductions in drug use and delinquency is the well-structured, community-based program, Big Brothers Big Sisters.

In sum, over the past decade, much effort has been devoted to identifying effective programs. At the forefront of this movement is the Blueprints for Violence Prevention initiative, which describes 32 model and promising programs that target multiple risk factors at various developmental stages, ranging from infancy through high school, and different populations, including positive development programs for the general population of youth, as well as programs

intended to work with high-risk youth and those already displaying problem behavior. This continuum of programs targets individuals and families in varying contexts (home, school, and community) and provides a comprehensive set of interventions that can meet the needs of almost any community.

Although information on best practices and effective programs has been developed and disseminated at federal, state, and local levels, this information diffusion alone is not enough to create beneficial and enduring prevention programming. Dissemination of best practices is only the first step. The second step is promoting the actual use of research-based information (Backer and David, 1995). Information on the experiences and problems encountered in replicating programs and effective methods for sustaining quality implementation is extremely important. Prevention practitioners experience a number of problems when they begin to implement new programs. Numerous financial, psychological, and organizational factors exist that challenge the successful adoption of programs. If these factors are not overcome, the end result may be poor implementation or program failure.

As the Blueprints programs and other research-based programs are adopted by more and more communities, there is a tremendous need to provide information on the importance of implementing a program with fidelity to the original design. Often a strong tendency is seen among implementers to modify a program or adapt it to meet the needs of the local community and derive a sense of ownership (Blakely et al., 1987; Rogers, 1995). Unfortunately, the research conducted on most programs is insufficient to identify which elements of a program can be modified without undercutting the mechanism through which the program model achieved its successful outcome.

The growing debate among those who advocate for strict adherence to the original demonstration model (fidelity) (Center for the Study and Prevention of Violence, 2001), those who argue for adding or subtracting from that model (proadaptation) (Berman and McLaughlin, 1978; Blakely et al., 1987; also see Center for Substance Abuse Prevention, 2002, for a review of the literature), and those who try to reconcile the two positions (Bauman, Stein, and Ireys 1991; Hall and Loucks, 1978) will not be resolved easily. However, the debate must be informed by empirical research. Program evaluators are now being asked to conduct the type of research that will help ascertain the minimal program threshold necessary to achieve successful outcomes. In the meantime, we can learn much from evaluators who have already incorporated aspects of implementation into their outcome evaluations. These few studies indicate that effectiveness is a

function of the quality of implementation. The following chapter discusses the importance of implementation fidelity, the next big challenge of prevention research and practice.

Chapter 2: Importance of Implementation Fidelity

Over the past several years, a large amount of information has been collected on the risk and protective factors for violence. Research has also identified prevention programs that can modify these risk and protective factors. The Blueprints initiative has been in the forefront in identifying exemplary programs that have been evaluated in rigorous, controlled trials, and much attention has been focused nationally on selecting and implementing quality programs. However, identification of effective programs is only the first step in efforts to prevent and control violence. Widespread implementation of effective programs is unlikely to affect the incidence of violent crime unless careful attention is given to the quality of implementation and the degree to which a program is delivered as intended (American Youth Policy Forum, 1999; Biglan and Taylor, 2000; Lipsey, 1999). Research demonstrates that successful implementation is not guaranteed by a site's decision to adopt a best practices program. Many science-based programs have been adopted in different settings with widely varying outcomes. In fact, a high-quality implementation of a less promising program may be more effective than a low-quality implementation of a best practice program (Gottfredson, Gottfredson, and Czeh, 2000; Wilson and Lipsey, 2000).

Until recently, little emphasis has been given to implementing programs with fidelity in both the science and practice of prevention. As a result, most people do not recognize the importance of implementation fidelity and feel that implementation of at least some program components is better than nothing. However, this may be an erroneous belief, since it is difficult to know which components of a program may be responsible for the reductions in violence. Programs must be implemented with fidelity to the original model to preserve the behavior change mechanisms that made the original model effective (Arthur and Blitz, 2000).

Defining Implementation Fidelity

Implementation fidelity, sometimes called adherence or integrity, is a determination of how well the program is being implemented in comparison with the original program design. The Center for Substance Abuse Prevention (2001) defines it as the degree of fit between the developer-defined elements of a prevention program and its actual implementation in a given organization or

community setting. Five primary components are examined when considering program fidelity (Dane and Schneider, 1998):

- **Adherence** refers to whether the program service or intervention is being delivered as it was designed or written (i.e., with all core components being delivered to the appropriate population; staff trained appropriately; the right protocols, techniques, and materials used; and in the locations or contexts as prescribed).

- **Exposure** may include any of the following: the number of sessions implemented, the length of each session, or the frequency with which program techniques were implemented.

- **Quality of program delivery** is the manner in which a teacher, volunteer, or staff member delivers a program (e.g., skill in using the techniques or methods prescribed by the program, enthusiasm, preparedness, attitude).

- **Participant responsiveness** is the extent to which participants are engaged by and involved in the activities and content of the program.

- **Program differentiation** identifies the unique features of different components or programs that are reliably differentiated from one another.

Although the concept of implementation fidelity is not new, ways in which to operationalize, or measure, fidelity are relatively recent phenomena. Fidelity is assessed by conducting a process evaluation. Appendix A describes why a process evaluation should be conducted when implementing a program. It also contains the major elements of the process evaluation that was conducted for the Blueprints replication sites.

Quality of Implementation Fidelity

Although an extremely important topic, program implementation has been relatively neglected in the prevention research literature (Fagan, 1990; Greenberg et al., 2001). In a review of more than 1,200 published prevention studies, only 5 percent provided data on implementation (Durlak, 1997). In a review of 34 rigorously evaluated programs to prevent mental disorders in school-age children, only 11 of the 34 studies (32 percent) used implementation information as a source of

data for outcome analyses and linked variability in implementation indices to differences in program outcomes (Domitrovich and Greenberg, 2000). Dane and Schneider (1998) found that only 39 of the 162 preventive interventions they examined contained information on program integrity, and only 13 of those considered the effect of fidelity on outcomes. Another examination of 181 experimental studies published between 1980 and 1990 in 7 journals known for behavior-based interventions showed that only 15 percent of the studies had systematically measured and reported integrity data; only 35 percent had operationally defined treatments (Gresham et al., 1993).

When evaluations do examine program fidelity, many studies have found that the programs are not being implemented with strength and fidelity to the original model, although several hallmark studies of health programs have underscored the importance of the quantity and quality of implementation (Connell, Turner, and Mason, 1985; Taggart et al., 1990; Resnicow et al., 1992). Evaluations of prevention programs can lead to conclusions that specific programs do not work when, in fact, the failure to find treatment effects may be the direct result of weaknesses in program implementation.

The National Study of Delinquency Prevention in Schools provides an example of the quality of implementation in the nation's schools. Several criteria were applied to discretionary prevention activities, with the following representing the average level of intensity and fidelity to good prevention practice (Gottfredson, Gottfredson, and Czeh, 2000):

- One or more persons is conducting the prevention activity(ies) from time to time.
- The prevention activity employs 71 percent of the content elements identified as representing best practices.
- The prevention activity employs 54 percent of the method's elements identified as representing best practices.
- The prevention activity involves 32 sessions or lessons (although there is a large range across activities of different types).
- The prevention activity lasts about 25 weeks.

- Both students and staff participate about once per week.

- Forty-one percent of the school's students participate or are exposed.

- There are approximately 4 program providers per 100 students in the school.

- If it is a classroom or a schoolwide activity, it operates nearly all year.

The researchers found that the average prevention activity (i.e., strategy) received a passing grade on only 57 percent of the quality criteria examined (i.e., only 57 percent of the indicators of quality or quantity were judged to be sufficiently strong enough to lead to behavior change), thus concluding that the quality of prevention activities in the nation's schools is generally poor and that prevention activities are not being implemented with sufficient strength and fidelity to be expected to produce a measurable difference in the desired outcomes.

Another example of the quality of program implementation in the nation's schools comes from a study of substance use prevention practice in 1,496 public and private middle schools. The study assessed the Centers for Disease Control and Prevention (CDC) guidelines for school-based tobacco use prevention programs (Wenter et al., 2002). The seven CDC recommended guidelines addressed the following areas:

- Policy development and enforcement.
- Instructional content.
- Comprehensive grade range.
- Program-specific teacher training.
- Family involvement.
- Cessation efforts.
- Program assessment.

On the positive side, two-thirds or more of schools reported addressing four or more of these recommended areas, but only 4 percent addressed all seven. Instructional content that has been shown to be effective in drug prevention was used in only 67 percent of the schools, and program-specific teacher training occurred in only 18 percent of the sites. The potential for reducing youth substance use will be dependent on the extent to which schools meet recommended practice for substance use programming.

In another example, a study examined school-based programs sponsored by the U.S. Department of Education's Safe and Drug-Free Schools and Communities Program and found that these programs were not implemented with the same attention to core components and dosage as found in the research models (Silvia and Thorne, 1997).

Ensuring that community providers understand and implement the core program components and dosage that are necessary for success is a serious challenge to program developers and disseminators. The original trials (i.e., efficacy studies) of programs are usually under the maximum control of the designer and under optimal conditions with high levels of funding, motivation, and support. The researcher generally exercises extreme care to ensure that the program is thoroughly understood and implemented with a high degree of quality. As programs are proven effective and implemented in settings under less favorable conditions (effectiveness studies), the chances for key program components to be modified and program delivery to be inconsistent become more likely (Dane and Schneider, 1998). This especially becomes problematic as programs are disseminated widely, and the program designer is no longer providing oversight or technical assistance. Depending on the type of modifications that are made, the program may become less effective in achieving the outcomes sought. In fact, the less the researcher is involved in the design, planning, and delivery of the intervention, the smaller the effect size on behavioral outcomes (Lipsey, 1999).

Modifications may be made by some practitioners with full knowledge of the program in an effort to adapt the program to fit local needs. In other instances, adaptations may be made because the site does not have a thorough understanding of the program and its underlying causal mechanism. Gresham and colleagues (1993) found that only 35 percent of the studies they reviewed provided an operational definition of the intervention through a detailed description or reference to a manual. However, even when detailed descriptions and manuals are provided, implementation may still fall short of the ideal. For instance, a study to test the effectiveness of the Life Skills Training Program in 56 New York State schools (Botvin et al., 1990a) showed that only 27 percent to 97 percent (mean of 68 percent) of the material in the curriculum was covered, with only 75 percent of the students in the prevention conditions exposed to 60 percent or more of the prevention program (i.e., one in four students had teachers who implemented less than 60 percent of the important points of the lessons).

Because efficacy studies generally include youth who are receiving all available program components, one can only conclude that a program works if implemented in its entirety. If specific

components are omitted, and if one of them is the mechanism that is causing much of the change in behavior, program effects could be lost. For example, the research design of the Adolescent Alcohol Prevention Trial (Donaldson, Graham, and Hansen, 1994) divided students into four groups. The students received either information about consequences of drug use only, resistance skills only, normative education only, or resistance skills training in combination with normative education. Refusal skills alone were not predictive of later substance use, although normative education alone was. Tests of the combined effects showed that the use of both resistance skills training and normative education resulted in the lowest rates of drug use. A school that fails to implement the lessons around both components, or that implements refusal skills alone, might be making little or no impact on drug prevention or reduction, thus wasting time and money.

Meta-analyses also demonstrate that monitoring of program implementation and better implemented programs produce better outcomes (DuBois et al., 2002; Hansen et al., 1991; Gresham et al., 1993; Wilson and Lipsey, 2000).

One meta-analysis showed that the best interventions can reduce recidivism by about 40 percent (Lipsey, 1999). Thorough implementation, however, was found to be a significant factor in recidivism effects. Intervention effects were larger when attention was given to the integrity of the program implementation. Additionally, programs of more than 6 months' duration were, on average, more effective than those of shorter length. Table 2.1 shows the independent contribution of several program characteristics to recidivism rates by comparing the recidivism rate of routine probation, or treatment-as-usual services, found in the control groups of 200 studies.

Table 2.1. Expected Recidivism With Various Intervention Characteristics for Noninstitutionalized Offenders

Intervention Characteristic	Recidivism
Routine Probation (P)	50%
P + Minimal Program	46
P + Best Intervention Type (B)	40
P + B + Good Implementation (I)	35
P + B + I + Over 6 Months' Duration	32

A base rate of 50 percent approximates that found in these control groups. The table shows the successive decreases in recidivism if a minimal program (programs found to have smaller effect

sizes in the meta-analysis, incomplete implementation, and less than 6 months' duration) is added to routine services, if that minimal program is upgraded to a more effective intervention (with larger effect sizes), and if the program is thoroughly implemented, with a longer duration. Similar results were found for institutionalized offenders.

A meta-analysis of 196 school-based violence prevention programs demonstrated that implementation quality made the largest contribution of any variable to effect size, with successful program implementation resulting in larger mean change (Wilson and Lipsey, 2000). A meta-analysis of 143 drug prevention programs (Tobler, 1986) showed that well-implemented programs achieved a mean effect size 0.34 greater than poorly implemented programs, a substantial difference over the 0.30 mean effect size derived from all the programs.

Furthermore, several examinations of experimental studies published in scientific journals show positive correlations between the degree of treatment fidelity and level of treatment outcomes, indicating that higher fidelity is related to stronger program outcomes (Domitrovich and Greenberg, 2000; Gresham et al., 1993). Most outcome studies that have examined implementation have used measures of adherence and/or exposure. Fewer studies have examined the quality of program delivery, participant responsiveness, and program differentiation. In the several individualized studies described below, the preponderance of evidence supports the argument that programs must be implemented with fidelity to achieve behavioral outcomes similar to those achieved in efficacy trials. In fact, the generalized trend is that high fidelity samples generally achieve stronger and a greater number of outcomes, and some results are only achieved in high fidelity samples.

Studies Examining Adherence

When a fidelity of implementation analysis (i.e., process evaluation) is conducted, it almost consistently shows superior outcomes when the program has been implemented with high fidelity (Fors and Doster, 1985; Gray et al., n.d.; Gresham et al., 1993; McGrew et al., 1994). For example, analyses typically yield stronger prevention effects for high-fidelity samples than for full samples (Blakely et al., 1987; Dane and Schneider, 1998; Gottfredson, Gottfredson, and Hybl, 1993). In an evaluation of the Life Skills Training Program (Botvin et al., 1995), results from the full sample indicated that the prevalence of heavy drinking, and weekly and monthly cigarette smoking, was significantly lower for the intervention groups than in the control group, and heavy

smoking was significantly lower in one of the intervention groups than in the control group. However, no significant differences were seen for the monthly, weekly, or three drinks or more per occasion rates, nor were there significant differences for marijuana use. In contrast, in the high-fidelity sample, the results were stronger, and more outcomes became significant. The experimental groups were significantly lower than the control group on all measures of cigarette use, weekly alcohol use, three drinks or more per occasion, being drunk, weekly marijuana use, monthly marijuana use, and monthly alcohol use.

In testing correctional interventions for chronically violent juvenile offenders in the Violent Juvenile Offender Program, two sites with stronger implementation of the program design (i.e., most of the core components of the program received moderate to strong implementation ratings) fared much better than two sites that had not implemented the program well (these two programs received weak to moderate ratings for most of the core components). The well-implemented programs had significant reductions in the number and severity of arrests for experimental youth compared with control youth, and significantly greater time until rearrest (Fagan, 1990).

An evaluation of 13 Massachusetts Intensive Supervision Probation programs compared the degree of implementation with variation in outcomes across sites. This evaluation found that the more fully the program was implemented, the more likely recidivism decreased significantly across a range of alternative outcome measures (Byrne and Kelly, 1989). A study of New Jersey intensive supervision programs assessed the commitment of parole offices to the program and found an inverse relationship to recidivism (Paparozzi, 1994). Parole offices that were most supportive of the program (n=6) produced a 17-percent lower overall arrest rate than nonsupportive offices (n=5).

An intensive case study of the Positive Action Program was conducted in a rural school in northern Florida in the first year of implementation (Flay, 2000). The program was fully implemented in 11 classrooms, partially implemented in 7 classrooms, and sporadically or not implemented in 7 classrooms. Data were obtained from teachers, students, and parents at the beginning and end of the school year. Overall, teachers who had implemented more of the program improved more in their attitudes about and perceptions of other teachers, their own teaching effectiveness, and parent involvement. Students who received more of the program improved their level of positive attitudes and behaviors and decreased their level of negative attitudes and behaviors such as disciplinary referrals, substance use, and violence. An increased level of implementation also improved parents readiness to take responsibility for their child's

character and behavioral development, decreased their rating of their child's likelihood of giving in to peer pressure, increased the level of communication with their child, and improved their knowledge of their child's friends and their parents. Furthermore, these effects were significant for students from both high and low socioeconomic status. Interestingly, the data suggest that receiving some or even most of the program is not sufficient for low-income students, and that these students need the complete program for substantial effects to occur.

Multisystemic Therapy, a home-based family therapy program that targets violent and chronic juvenile offenders, has demonstrated in randomized trials substantial reductions in rearrests, incarceration, and self-reported offending, and a variety of effects on mediating variables related to family and peer relations, family functioning, and parental monitoring. However, in one study of violent and chronic juvenile offenders and their families that omitted ongoing treatment fidelity checks, adolescent symptomatology and days incarcerated were reduced, but there were no significant effects on criminal behavior and other instrumental (mediating) outcomes. In cases where treatment adherence ratings were high, the outcomes were substantially better (Henggeler et al., 1997). Another sample of substance abusing juvenile offenders and their primary caregivers showed similar results (Huey et al., 2000). Furthermore, MST adherence had both a direct impact on delinquent behavior and an influence that was partially mediated through its effects on family functioning and cohesion, parent monitoring, and delinquent peer association (Huey et al., 2000).

Some programs only have significant effects in the high-fidelity samples. For example, the Child Development Program was evaluated in 12 program schools; however, only 5 of these schools showed clear evidence of widespread program implementation. No clear evidence of positive program outcomes was seen for students at all 12 program schools. However, as compared with students in the control schools, students in the 5 high-fidelity schools had significant declines in alcohol and marijuana use and showed an increased sense of their school as a community (Battistich et al., in press).

A study of the Life Skills Training Program in eight urban New York schools showed that the effects of the program reflected the high-implementation teachers, who had a mean completion rate of 78 percent of the material. The low-implementation teachers completed the material with a mean of 56 percent (Botvin et al., 1989). Another study of the Life Skills Training Program in 10 suburban New York junior high schools showed no significant differences between the teacher-led implementation and the control group in the full sample on smoking, alcohol, and marijuana use (Botvin et al., 1990b). (It should be noted that a peer-led booster condition did reduce substance

use.) Even worse, the control group had significantly fewer drinkers than the teacher-led group on several of the alcohol measures. However, in a restricted sample of students for whom teachers had implemented the program with a reasonable degree of fidelity (i.e., teachers who received a rating of 4 or 5 on a scale ranging from 1 to 5 in terms of implementation fidelity), the proportion of smokers, alcohol drinkers, and marijuana users declined. In one other Life Skills Training Program study (Botvin et al., 1990a), no positive effects were found in the sample of students whose teachers exposed them to less than 60 percent of the material. By using a 3-year cumulative implementation score of 60 percent as the inclusion criteria for the analysis of program effectiveness, significant treatment effects were found for three of five measures of substance use.

A test of a theory-based intervention (Seattle Social Development Project) that tries to change the opportunity, skill, and reinforcement structures of mainstream classrooms by training teachers in educational strategies designed to promote academic achievement and school bonding showed that students' levels of classroom opportunity, involvement, reinforcement, and bonding to school was increased only through thorough implementation of these teacher practices (Abbott et al., 1998).

Modifying or adding components to a program can present a serious threat to program fidelity, especially if the modification or addition consists of elements that have been found to be harmful to youth. For example, the use of scare tactics in drug or violence prevention has not been found to be effective (Botvin, 1990; Hansen et al., 1988) and in some cases has been found to be harmful (Petrosino, Turpin-Petrosino, and Finckenauer, 2000). Efforts to introduce elements into already proven programs may backfire and result in a reduction of program benefits that might have otherwise been expected. In the Midwestern Prevention Project (Pentz et al., 1990), although none of the teachers reported that he or she had deviated from the program substantially, 68 percent of the teachers deviated slightly. All deviations included additional material, discussion, or sessions to the program. These deviations had no significant effects on cigarette, alcohol, or marijuana use. In some cases, local enhancements (i.e., additions) to a model may enhance effectiveness. In a study of 7 education and criminal justice projects in 70 sites, additions to the program model were positively related to positive outcomes, whereas modifications of the existing fidelity components were not related to greater program effectiveness (Blakely et al., 1987). It also appeared that the greater the number of modifications present, the greater the likelihood that key components linked to effectiveness were changed.

Studies Examining Exposure

Another serious compromise to implementation fidelity is related to program exposure (sometimes called dosage), i.e., the amount of program content received by participants. Although there are some inconsistent findings related to dosage (Conduct Problems Prevention Group, 1999; Dane and Schneider, 1998), most programs are less effective when study participants do not receive the intended dosage (Allen, Philliber, and Hoggson, 1990).

One example of incompleteness of delivery occurs when youth fail to complete the treatment. For instance, comparisons of youth completing the Family Empowerment Intervention (FEI) program (58 percent) versus those that did not complete FEI (42 percent) revealed that youth completing the program had lower rates of delinquency (self-reported crimes against persons and total delinquency, general theft, and index crimes) and drug use (drug sales and frequency of getting very high or drunk on alcohol, frequency of marijuana use, and positive hair tests for marijuana) than youth not completing FEI (Dembo et al., under review).

Sometimes implementers fail to deliver the program in its entirety. In the Midwestern Prevention Project, the differences between high- and low-implementation schools, as measured by the amount of implementation or program exposure, were greater than the differences between the treatment and control schools for all measures of substance use. Additionally, the percentage of change in prevalence rates (i.e., proportion of youth using substances) from baseline to 1 year for cigarette, alcohol, and marijuana use was lowest in the high-implementation schools and highest in the low-implementation and no-implementation schools. In the most dramatic example of change, the percentage of students who self-reported smoking within the past month increased from 13 percent to 24 percent for the control group and increased from 13 percent to 20 percent in low-implementation schools, but decreased from 15 percent to 14 percent in high-implementation schools (Pentz et al., 1990).

A comprehensive middle school program, trying to increase social competencies, social bonding, and school success by using program components that had previously demonstrated success in reducing problem behaviors, failed to achieve the expected levels of implementation. The percentage of students receiving the dosage standard set for each component ranged from 0 percent to 67 percent, with a mean of 28 percent across all components. Effects on youth behavior or attitudes were absent (Gottfredson, Gottfredson, and Skroban, 1998).

In a study of the Bullying Prevention Program, classes that showed larger reductions in bully/victim problems had implemented the three classroom components of the program to a greater extent than those with smaller changes (Olweus and Alsaker, 1991).

In the Resolving Conflict Creatively Program (RCCP), children whose teachers exposed them to a high number of lessons did better than children exposed to a low number of lessons or no lessons. Involvement in a high-lessons RCCP classroom slowed down by an entire year the normal developmental growth in aggression-related processes and the decline in competence-related processes.

Though receiving the intended number of sessions is important, implementing staff are often responsible for compromising the dosage because of their own lack of time, commitment, and resources, which undermines any positive effects that the program may have. Although a common theme reported by implementers is that some exposure to the program elements is better than none, in the case of RCCP, children in the low-lessons group fared worse than children who received no lessons (Aber et al., 1998).

Quality of Program Delivery and Participant Responsiveness

Few studies have examined how the quality of program delivery and participant responsiveness influence program outcomes. One study used both of these measures of program integrity to create an integrity index, consisting of ratings by program specialists (who taught the program to students) on eight items:

- Program specialist enthusiasm.
- The degree to which the delivery met the goals of the program.
- The degree to which the program specialist involved all (as opposed to a selected few) students.
- Classroom control.

- Class enthusiasm.
- Students' responsiveness.
- Students' degree of participation.
- Overall smoothness of the lesson.

These ratings of program integrity were found to significantly moderate outcomes for three of seven mediating variables (Hansen et al., 1991).

Conclusion

These empirical studies make clear that implementation fidelity is important in achieving successful outcomes. In short, these studies show that the closer an intervention adheres to the original design, the greater the degree of behavior change. These findings underscore the need to understand and document the reasons leading to poor implementation and improve the conditions that can facilitate a high-quality implementation.

High-quality implementation is more likely when core program components are defined in advance and then systematically monitored to ensure compliance (Center for Substance Abuse Prevention, 1997; Gresham et al., 1993). The Blueprints initiative emphasizes, through each Blueprints book (Elliott, 1997), all core program components and includes a chapter on implementation issues to help sites considering the adoption of a program to think through some of the obstacles that they may face.

Federal and state agencies and private foundations should not be content to just provide money to implement a best practice program. Funding should also be provided to organizations that can help communities accomplish the following:

- Identify empirically supported programs, assess the needs of the site, and help the site select an appropriate program.
- Educate all key players as to the core components of the program and the need for quality

implementation.

- Help the site to implement the program with fidelity by providing training and technical assistance and some standard for assessing fidelity of implementation.

Fidelity assessment instruments, designed by the program developers or the funding agency in collaboration with the program developers, should be used to provide feedback to the implementing agency and the funders.

In large-scale projects, monitoring can be done by an outside agency, as has been done in the Blueprints project. Many of the replication sites and program designers have appreciated this role being assumed by the Blueprints team. Technical assistance providers have not wanted to assume this role, preferring to devote their time and energies to providing needed support through training and technical assistance. Ambivalence among TA providers regarding fidelity may also arise in the ongoing struggle to balance fidelity with the stated needs or demands of the site for adaptation. This struggle can become especially difficult if dissatisfaction with the program appears to be emerging. Implementing sites do not always have ample time and resources to devote to the monitoring process and often don't recognize deviations or understand the importance of fidelity to all program components. Thus, the monitoring role is often more easily assumed by an independent agency since it has the least amount of conflicting interests and possesses the technical expertise to help community providers plan for implementation and develop and sustain a program infrastructure that will exist after the TA providers and evaluators are gone.

The Blueprints experience has shown that adherence to a program can be increased by having an outside agency monitor implementation. For example, the Life Skills Training Program had an average implementation rate of 68 percent in a clinical trial monitored by the program designer (Botvin et al., 1990a). The intervention materials delivered in the replications of Life Skills Training in approximately 100 sites, which were monitored by Blueprints, ranged from an overall average of 80 percent to 86 percent (across 6 cohorts over 3 years), a substantial increase over that found in the clinical trial conducted under the most favorable of conditions. This suggests that implementation fidelity can be greatly enhanced in real-world applications of programs, where conditions are not usually as favorable for achieving a comprehensive implementation.

Although some implementing sites may at first resent the attention being paid by the monitoring agency to all the details of the project, over time most sites learn to appreciate the higher quality implementation they eventually achieve and its impact on outcomes. One of the Blueprints site coordinators stated the following:

> There was a demand for attention to "dotting the i's and crossing the t's" which was beyond the norm. Initially, this attention to detail was experienced as overly anal and as a pain in the [delete]. Eventually, however, over the course of a year of implementation, it became crystal clear that fidelity to the model is as important as the model itself. Now I can see that it is this painstaking fidelity that makes [name of program] (and undoubtedly the other Best Practices modalities) a truly effective program with juvenile offenders and their families.

This sentiment was also reported in the Center for Substance Abuse Prevention's replication initiative in 16 projects using 11 model programs. Most of the replicating agencies felt an obligation to implement with high fidelity. One site had complained to the Center's staff about several of the core program components. However, 6 months later the site implementers were grateful for the encouragement to stick to the original program design because the results promised by the program materialized in a robust way (Gray et al., n.d.).

Because implementation quality is related to program effectiveness, identifying and understanding the factors that impede and enhance high-quality implementation are important. Designers, implementers, and sponsors of programs all share responsibility for implementation quality, and they must work together to develop strategies to facilitate and enhance implementation. "The key to understanding how successful research can be translated into successful practice lies in understanding how programs and policies can be implemented so that quality is maintained and the programmatic objectives intended by the program developers are achieved" (Dusenbury et al., 2001).

The next two chapters of this report document ways to improve the quality of an implementation, beginning with a chapter on assessing site readiness and continuing with a chapter outlining the challenges of program implementation.

Table 2.2: Comparison of Full Sample and High Fidelity Results From Studies of Prevention Programs

Study/Program	Program Type / Target Population	Evaluation Design / High Fidelity Sample	Full Sample Results	High Fidelity Results
Abbott et al., 1998 Seattle Social Development Project	Intervention to modify teaching practices in grades 1–6 (full intervention). This study focused on teachers in grades 5 and 6 (a late intervention condition).	Nonrandomized field trial in which an intervention initiated in grade 1 was nested within a longitudinal panel study. All consenting 5th grade students in 18 public schools in Seattle were included in this study. Classroom observation ratings determined the extent that targeted teaching strategies were used by each teacher. Teaching practices applied with fidelity received +1, ineffective strategies received 0, and strategies in conflict with the program received -1. These scores were transformed into a single implementation score ranging from 23 to 46.	Intervention produced higher student achievement.	Results primarily among high-implementation teachers. The degree of implementation resulted in significant differences in opportunities for involvement, actual involvement in the classroom, and reinforcement for classroom involvement, and higher levels of bonding to the school. Student achievement marginally significant.
Allen, Philliber, and Hoggson, 1990 Teen Outreach Program	Dropout and pregnancy prevention for junior high and high school students at risk of dropout and teenage pregnancy	Matched control groups in 35 sites in 30 schools nationwide Dosage—total volunteer hours and total classroom hours	Overall results showed significantly lower levels of suspension, dropout, and pregnancy.	Results stronger. Students in programs where more volunteer work was performed had fewer problems at exit. More classroom hours and higher levels of curriculum use were related to fewer problems for younger students but not for older students.
Battistich et al., in press Child Development Project	School-based comprehensive, ecological intervention program for elementary school students (K–8)	Quasi-experimental cohort in sequential design with 24 matched schools (12 experimental and 12 control). High fidelity sample included 5 schools in which most or all of the teachers showed at least moderate positive changes from baseline implementation scores over the 3 implementation years.	Significantly less alcohol use among program students compared with controls.	Results primarily in high-implementation schools. High-implementation schools showed reductions in alcohol and marijuana and increases in school bonding and intrinsic academic motivation, acceptance of out groups, conflict resolution, and concern for others. 52% of outcomes showed statistically reliable effects favoring students in the 5 high-implementation schools; no significant effects favoring control schools were detected.
Botvin et al., 1990a Life Skills Training	Drug prevention targeted at junior high/middle schools.	Randomized trial including 56 public schools (*n*=4,466 students). 3-year followup at end of grade 9. E1 condition—one day formal training. E2 condition—videotape training. High fidelity sample (*n*=3,684 from 50 schools) received 60% of intervention over 3 years, based on classroom observations of objectives covered.	No effects in full sample	Results only among students with high-implementation teachers. Significant reductions in cigarette smoking and marijuana use (E1 and E2 conditions) compared with controls; frequency of getting drunk less for E2 condition than controls.

Table 2.2: Comparison of Full Sample and High Fidelity Results From Studies of Prevention Programs (cont.)

Study/Program	Program Type / Target Population	Evaluation Design / High Fidelity Sample	Full Sample Results	High Fidelity Results
Botvin et al., 1995 (6-year followup of Botvin et al., 1990a, see above) Life Skills Training	Drug prevention targeted at junior high/middle schools.	Randomized trial including 56 public schools. 6-year followup at grade 12. E1 condition—one day formal training. E2 condition—videotape training. High fidelity sample received 60% of intervention over 3 years, based on classroom observations of objectives covered.	Weekly and monthly cigarette smoking and heavy drinking in both intervention groups were lower than control group. Heavy smoking in E2 group only lower than control group.	Results stronger and more outcomes significant. The experimental groups were significantly different from the control group for all measures of cigarette use, weekly alcohol use, 3 drinks or more per occasion, drunk, and weekly marijuana use. Monthly marijuana use was lower for E1 compared with the control group. Monthly alcohol use was lower for E2 compared with control group.
Botvin et al., 1990b Life Skills Training	Drug prevention in junior high/middle schools.	10 schools (7th graders) randomly assigned to (1) LST taught by older peer leaders, (2) LST taught by teachers, (3) LST with 8th grade booster taught by peers, (4) LST with 8th grade booster taught by teachers, and (5) control group (*n*=998 students at 1 year followup). Teachers were rated on a scale of 1 to 5 by field staff who had observed implementation. Teachers who received ratings of 4 or 5 constituted a restricted sample of high fidelity implementers.	At the 1-year followup, the peer-led booster condition was the only one to produce significant behavioral effects on smoking (4 of 4 measures), alcohol (1 of 5 measures), and marijuana (2 of 5 measures). No differences between teacher-led conditions and controls. In some instances, the teacher-led booster condition produced results that were worse than the control condition.	Only results in high-implementation sample for teacher-led condition. Differences favoring teacher-led condition on proportion of weekly and daily smokers and smoking index for females, ever use of marijuana for females, and weekly alcohol use and drunkenness index.
Botvin et al., 1989 Life Skills Training	Drug prevention for junior high/middle schools.	Random assignment of 8 schools (7th grade, *n*=345 students) whose student body was at least 50% Hispanic. Classroom observers rated teachers on points and objectives made in lessons, resulting in a quantity score based on proportion of points made. Also, assessment made of teacher effectiveness. Experimental group broken into 2 subgroups: high implementation (above the mean in terms of program completeness, *n*=156) and low implementation (*n*=99).	Intervention shows marginally significant reduction on smoking ($p = .0618$).	Effects due to high implementation. High levels of intervention significantly predicted reductions in smoking. No effects in the low-implementation subgroup. This suggests that the marginally significant effect of the two combined treatment subgroups derives solely from the effects produced by the high-implementation subgroup.

Table 2.2: Comparison of Full Sample and High Fidelity Results From Studies of Prevention Programs (cont.)

Study/Program	Program Type / Target Population	Evaluation Design / High Fidelity Sample	Full Sample Results	High Fidelity Results
Connell, Turner, and Mason, 1985 School Health Curriculum Project	Health instruction for grades 4–7.	30,000 children in 1,071 classrooms from 20 states (article does not describe evaluation). Full implementation required instruction hours equal or greater than minimums prescribed by program designers, more than 80% of the program activities taught, and greater than the program average degree of fidelity to program materials.	Significant differences between program and comparison classroom performance on program-specific knowledge, general knowledge, general attitude, and self-reported practices.	Results stronger. In comparison with differences reported for the entire sample of program classrooms, the effects in the classrooms that fully implemented are 5% greater for program-specific knowledge, 20% greater for general knowledge, 90% greater for attitude, and 85% greater for practice measures.
Dembo et al., 2000 Family Empowerment Intervention	Family preservation model using home visitation by paraprofessionals. Juvenile offenders and their families.	Youth randomly assigned to intervention or minimal control with monthly phone contact after stratification by gender, race, and ethnicity. High fidelity sample completed 58% of program.	Intervention youth reported getting high or drunk on alcohol less often than control subjects; they also had less marijuana use.	More outcomes significant. Lower rates of delinquency (self-reported crimes against persons and total delinquency) and drug use (sales and frequency of getting very high or drunk on alcohol, frequency of marijuana) than for youth not completing program. Lower rates of new charges and fewer new arrests.
Fagan, 1990 Violent Juvenile Offender Program	Reintegration program (transitional residential) for violent juvenile offenders.	Random assignment to facility with treatment program or mainstream correctional facility (control) in 4 cities. A composite assessment (high, medium, low) of implementation was derived from implementation ratings for each of the program elements: case management, reintegration of multiple phases assessed through field observations, and reviews of program documents and individual case records.	Results are reported by site only—high-implementation and low-implementation sites.	Results only in high-implementation sites. In the 2 sites with strong implementation, there were fewer arrests for felonies, fewer rearrests, and a longer interval until the first arrest over 3 at-risk periods. In the 2 sites with weak implementation, few significant differences over the 3 time periods were seen in the recidivism indicators.

Table 2.2: Comparison of Full Sample and High Fidelity Results From Studies of Prevention Programs (cont.)

Study/Program	Program Type / Target Population	Evaluation Design / High Fidelity Sample	Full Sample Results	High Fidelity Results
Flay, 2000 Positive Action Program	Character education program that teaches students to feel good about themselves by doing positive actions.	Case study of one rural Florida school that implemented program during the 1999–2000 school year. Classrooms were classified as fully implemented (*n*=11), partially implemented (*n*=7), and sporadic or no implementation (*n*=7). How these categories were derived was not reported.	No full sample results.	Results stronger. Kindergarten students showed more improvement in positive behaviors with more implementation. Grade 1–3 students in fully implemented classrooms (analysis for this group is limited to 2 levels of implmentation—all or some/most), showed more improvement in feelings about other people and themselves; more improvement in attitudes about doing positive behaviors (this decreased in classrooms that did not fully implement); and spent more time doing positive behaviors. Grade 4–5 students showed greater improvement in attitudes about positive behaviors, displayed fewer negative behaviors (i.e., substance use and violence), and had fewer disciplinary referrals with more implementation. Teachers and parents also improved attitudes and behaviors with more implementation.
Gottfredson, Gottfredson, and Hybl, 1993 Multiyear, Multischool Study	School, classroom, and individual level interventions aimed at reducing middle school student misbehavior (grades 6–8).	Nonequivalent control group design with 8 public middle schools in Charleston, SC. Two schools were designated as the comparison group, primarily on the basis of demographics. Implementation data come primarily from an end-of-year teacher survey. Low implementation schools consisted of the 2 control schools that participated only in some aspects of the program. Medium implementation schools consisted of 3 treatment schools that experienced visible implementation problems or low levels of administrative support. High implementation schools consisted of 3 treatment schools that had no visible signs of implementation breakdown and had administrative support.	Significant changes in the desired direction were found for 5 of the differences examined; 1 significant change in the undesirable direction.	Positive results primarily in high-implementation schools, with more outcomes significant. Significant changes in the desired direction were found for the high-, medium-, and low-implementation schools for 9, 2, and 1 of the 13 differences examined, respectively. Significant changes in the undesirable direction were found for 1, 2, and 1 of the differences examined for the 3 levels of implementation.

Table 2.2: Comparison of Full Sample and High Fidelity Results From Studies of Prevention Programs (cont.)

Study/Program	Program Type / Target Population	Evaluation Design / High Fidelity Sample	Full Sample Results	High Fidelity Results
Henggeler et al., 1997 Schoenwald et al., 2000 Multisystemic Therapy	Clinical, home-based family therapy.	2x2x2 Condition (MST vs. Usual Juvenile Justice Services) x Time (pretest vs. posttest) x Site (Site 1 vs. Site 2) design, with random assignment to treatment conditions (*n*=155 chronic or violent juvenile offenders and their families). Factor analysis of a 26-item scale designed to measure family and therapist behaviors specific to the practice of MST (completed by parents, adolescents, and therapists) after randomly selected therapy sessions during the 4th and 8th weeks of therapy). Factor scores were derived from the average ratings from each time period, for each informant. Multiple regression was run against Time 2 outcome measures with the respective Time 1 variables and treatment adherence factors as independent variables.	MST significantly improved adolescent psychiatric symptomatology at posttest and decreased incarceration by 47% at 1.7 year followup. No significant differences on arrests and criminal activity.	Outcomes were better in cases where treatment adherence ratings were high. Various aspects of adherence affect key ultimate outcomes. Specifically, parent and adolescent ratings of treatment adherence predicted low rates of arrest. Therapist ratings of treatment adherence and treatment engagement predicted decreased self-reported index offenses and low probability of incarceration.
McGrew et al., 1994 Thresholds Bridge Programs	Assertive community treatment (mental health service model—training in community living after discharge from state psychiatric hospital). Clients satisfied the state's definition for serious mental illness and showed evidence of high use of psychiatric hospital services.	18 programs were evaluated over a 10-year period—3 were the original Bridge program (1978–1980), 6 were first generation (1986–1987), 6 were second generation (1989–1991), and 3 were third generation (1990–1991). Individual studies are not described, but the outcome measure was effect size of reduction in number of days hospitalized. Fidelity was measured by a 17-item subset of expert-identified critical ingredients that formed a fidelity index with 3 subscales: staffing, organization, and service.	The mean effect size of .55 shows that these programs had a moderate impact on reducing days in hospital.	Increased fidelity scores on the total scale, organization subscale, and staffing subscale were moderately to strongly correlated with reduction in days hospitalized. Only the service subscale was not significantly correlated; however, the individual item—total number of contacts—in this subscale was significantly correlated.

Table 2.2: Comparison of Full Sample and High Fidelity Results From Studies of Prevention Programs (cont.)

Study/Program	Program Type / Target Population	Evaluation Design / High Fidelity Sample	Full Sample Results	High Fidelity Results
Olweus and Alsaker, 1991 Bullying Prevention Program	Antibullying program for primary and secondary school students.	Cohort longitudinal design with consecutive cohorts. Approximately 2,500 students, originally in grades 4–7 from 42 Bergen, Norway, schools. A composite score was computed at the classroom level for dosage (i.e., whether there were class rules against bullying , whether regular class meetings about bully/victim problems had been held, and whether the class had set up roleplays about bully/victim problems).	Bullying/victimization was reduced; also reductions in general antisocial behavior such as vandalism, theft, and truancy were seen; increase in student satisfaction was noted.	Results stronger in high fidelity classrooms. Those classes that showed larger reductions in bullying/victimization problems had implemented the 3 components of the program to a greater extent than those with smaller changes.
Pentz et al., 1990 Pentz et al., 1989 Midwestern Prevention Project	Community-based drug prevention with middle/junior high school students as primary focus.	Quasi-experimental—50 middle and junior high schools in metropolitan Kansas City. 8 schools randomly selected for longitudinal assessment. In the other 42 schools, a 25% sample of students was randomly selected by classroom in a cross sectional cohort design. Exposure was calculated by multiplying the number of sessions by average time per session and dividing by 60. The median was used to construct high- and low-implementation groups.	1 year after intervention, drug use was significantly higher in control than program condition for all measures of drug use, i.e., alcohol, cigarette, and marijuana use during last month and last week.	Results stronger. Last month and last week cigarette, alcohol, and marijuana use (prevalence) significantly lower for intervention group than for control group. All scores in high-implementation group increased less than those for low-implementation group ($p = .05$ for all). The low-implementation group had less increase in use rates compared with the control group, although none of the comparisons were significant.

Chapter 3: Assessing Site Readiness

Readiness is a major factor in successful implementation. Communities, agencies, and schools may be at various stages of preparedness for implementing prevention programs. Simply making information on prevention available to potential users is not enough; technical assistance should also be provided to help communities assess the many types of programs and make determinations about which programs fit the identified problem and the local needs, resources, and mission of the community or agency. Failure to adequately prepare may lead to failed program implementation.

The research on technology transfer (see especially Backer, David, and Soucy, 1995a; Brown, 1995) has documented five fundamental conditions that must be met to facilitate the adoption of a new treatment or intervention program:

- Information describing effective, research-based programs must be disseminated in a way that is accessible and understandable to individuals and organizations so that they are aware that such interventions exist and can be replicated without excessive costs or undesirable side effects.

- The adoption of a new innovation is often met with resistance, fear, and anxiety, and prevention practitioners must take steps to help reduce this apprehension and enhance readiness for change.

- Communities must conduct comprehensive needs assessments to determine the types of innovations that will best address their problems.

- Practitioners must ensure that money, materials, and personnel are available to implement programs that can be sustained in the long-term.

- Practitioners must carefully consider how new programs will be adopted, identify who will deliver the intervention(s), which population(s) will be targeted, how monitoring will occur, and so on.

Achieving these goals is not easy for they require that communities demonstrate not only knowledge regarding successful, research-based programming and a willingness to adopt such

strategies, but also careful planning and preparation to ensure a successful replication. The Blueprints initiative was designed to help prevention practitioners overcome these challenges, and strategies for doing so will be described in more detail below. The Blueprints' mission was two-pronged. The first component involved identifying programs that effectively reduced problem behaviors and disseminating this information to communities. The second phase of the initiative entailed assessing and enhancing sites' readiness and ability to replicate a Blueprints program. This work was achieved through the following efforts:

- Creating applications that required applicants to specify their needs, resources, and commitment to the project.

- Gathering additional information from sites through telephone and e-mail consultations.

- Conducting site visits to better determine program support, validate information described in the application, and provide a forum for key participants to become better informed and supportive of the new initiative.

Communicating Information Regarding Effective, Research-Based Programs

To successfully transfer technology, information must be credible and available in a language and format that are accessible to prevention practitioners (Backer, David, and Soucy, 1995a; Brown, 1995). Unfortunately, evidence regarding effective prevention programs is often not shared by researchers in a systematic way, is published in journals that are not available to those in the field, or is written in scholarly jargon and based on complicated statistical procedures that may be incomprehensible to prevention practitioners (Webster-Stratton and Taylor, 1998). Moreover, a recent trend has been the publication of numerous lists of "best practice" programs that typically vary from source to source, resulting in a plethora of information that is difficult for those in the field to assess. When faced with the obstacles of gaining access to and understanding research findings, practitioners often choose to continue current practices (Backer, David, and Soucy, 1995a).

The Blueprints team attempted to overcome these problems by presenting information regarding the effectiveness of the Blueprints programs in a variety of formats easily accessible to practitioners. The team conducted oral presentations at workshops and conferences to outline strategies for effective intervention and to identify model programs most effective in reducing problem behavior. Next, the team created brief overviews of each program that were available on the Blueprints Web site and distributed to interested parties. Working with program developers, Blueprints staff designed comprehensive books (Blueprints) describing each program in detail. These volumes were specifically designed to translate the scientific rationale and research conducted on each program into an easy-to-read, practical handbook that could be used by prevention practitioners. Brief descriptions of the Blueprints programs were also published in trade magazines that are commonly read by the practitioner community. A videotape in which Blueprints program designers briefly described their programs was also produced and disseminated to the practitioner community.

Enhancing Local Support for Empirically Based Programs and Readiness To Adopt New Initiatives

Becoming more aware of the availability and effectiveness of research-based interventions is the first step in creating an environment that supports "best practice" programs. However, for such attitudes to become widespread takes time, and practitioners must be ready to exert considerable effort to enhance organizational and individual commitment to scientifically valid programs and show a readiness to adopt new initiatives (Backer, 1995; Webster-Stratton et al., 2001). Although community leaders may realize the importance of supporting empirically valid programs (especially when funding is contingent on adopting such practices), this attitude is not always shared by program administrators or the front-line staff charged with delivering the service. It is especially difficult to persuade organizations to replace "home-grown" programs or interventions, which may not have been evaluated or that have not demonstrated effectiveness, with science-based programs (Everhart and Wandersman, 2000). In many cases, the former are adopted because they have been recommended by others, are easily accessible, and are considered easy, cheap, and convenient to implement. In comparison to such programs, research-based interventions, which tend to be long-lasting, comprehensive, and somewhat more difficult to implement (requiring, for example, that therapists spend many hours with clients or that teachers replace didactic strategies with behavioral rehearsal and demonstration), may not be immediately appealing to the individuals who will be charged with delivering them to a chosen population. For

these reasons, researchers often advise that stakeholders agree on the need for change and the relevance of the intervention for the school or agency (Fullan, 1992). Programs that are selected after a more extensive information search are more likely to incorporate research-based practices and be implemented in a higher quality fashion (Gottfredson and Gottfredson, 2002). One way to accomplish consensus about a prevention approach is to include key players in planning for program adoption, implement the program incrementally so that individuals slowly become more familiar with the rationale and techniques for using the innovation (Brown, 1995; Webster-Stratton et al., 2001), and assess at frequent intervals so that short-term goals might be met that build confidence and trust among partners (Nelson et al., 2000).

Individuals may be reluctant to adopt new programs for other reasons. In many cases, prevention practitioners are satisfied with the status quo and do not wish to support new innovations, particularly if doing so will result in extra work. For example, many teachers involved in the Blueprints Life Skills Training (LST) Program reported that they preferred the DARE program to the LST curriculum, even when school administrators recognized that the former was not effective in reducing students' drug use. Although teachers identified various reasons for this attitude (e.g., claiming that DARE was more interactive, students enjoyed the officers' presence), at least part of the reason that instructors favored DARE may be that they did not have to deliver it themselves and were free to use the extra time to accomplish other tasks. Because overcoming this resistance is not easy, some researchers advocate that organizations seek volunteers from within the agency to become "early adopters" of the innovations (Webster-Stratton and Taylor, 1998). However, many organizations cannot adopt this strategy, particularly if a program is meant to be implemented comprehensively by all individuals in the school or agency. Thus, a major challenge for implementing new strategies is ensuring that individuals be energized rather than overwhelmed when confronted with new programs (Backer, 1995; Brown, 1995).

When motivation and support are lacking, projects are sure to fail. A lack of commitment can lead to resistance, limited implementation, and even program sabotage. For example, when teachers, who are typically working under enormous time pressures, are not involved in program planning and decisionmaking, they may refuse to implement new programs or may deliver them in an inconsistent or incomplete manner. Another situation occurred when several LST sites relied on outside prevention agencies to apply for and implement the curriculum. When these agencies failed to develop full support for the program within the school, their adoption of the curriculum was often challenged. The schools often delayed providing prevention specialists with access to students, and teachers showed disdain for the curriculum by not helping with classroom

management, appearing bored by the program, and even being disruptive when prevention specialists attempted to deliver the curriculum. In an implementation of the PATHS program, the teachers at one site lost their initial zeal for the program when new education mandates from the state were issued, causing teachers to spend more time coaching students in the mandated areas. In the absence of strong principal support, that program failed.

During the application process, the Blueprints team simultaneously assessed and enhanced sites' readiness for change, although priority was given to sites that appeared most receptive to adopting the new program. The application asked sites to describe the groundwork conducted to prepare others for the introduction of a new initiative. For school-based interventions, applicants were asked whether or not they had informed school administrators, counselors, and teachers of the decision to implement a new curriculum and to describe how these individuals reacted to this initiative. If key participants had yet to be informed, applicants were urged to remedy this situation and were given information they could use to improve participants' knowledge of the program. Not surprising, when school administrations thoroughly explained their reasons for choosing a particular program, described evidence of its effectiveness, and asked teachers if they would be willing to implement such a curriculum, the innovation was more likely to succeed. For complex programs that required interagency linkages and support, representatives from all pertinent agencies were requested to attend the feasibility visits. This ensured that all viable parties had information about the program before its adoption, helped garner motivation for the program, and allowed everyone to understand their own roles and responsibilities in the new effort.

Applicants were also asked to describe other programs that had been adopted in the past to determine whether the site had a history of adopting new initiatives and whether these previous attempts were successful (Backer, 1995; Gendreau, Goggin, and Smith, 1999). In some cases, applicants noted that previous efforts were often made half-heartedly, with some staff implementing the program but not others, or some delivering only parts of the intervention. Although preference was given to sites that did not have a history of failed innovations, sites with failures were sometimes included if it appeared past problems could be avoided. For example, several school administrators reported that staff had not received training for the earlier intervention, and, as a result, they had low motivation and few skills to teach the program. Because the Blueprints initiative included training for all participants, these were not insurmountable obstacles.

A number of authors have emphasized the importance of interpersonal contact in encouraging program adoption and implementation (Backer, David, and Soucy, 1995a; Brown, 1995), and conducting site visits was an important means of assessing and enhancing site commitment and readiness. Site visits were jointly conducted by members of the Blueprints team and the program designers to provide applicants with direct contact with those most knowledgeable about each program. The designers' presentations of their programs and the ensuing discussions often created a stronger motivation within organizations to implement programs. In addition, they provided a deeper understanding of the program elements, decreased fear and resistance, and enhanced motivation to conduct the program with integrity to the design. For these reasons, all key participants were required to attend feasibility visits, and sites that could not comply with this requirement were rated lower. In fact, later experience confirmed that the most problematic sites, especially those that lacked strong commitment at either the organizational or individual level, were those without full attendance at feasibility visits.

Conducting a Needs Assessment

A critical step for communities preparing to adopt a science-based program is to conduct a thorough needs assessment that identifies protective and risk factors for problem behavior and prioritizes the most important areas for intervention (Arthur and Blitz, 2000; Wandersman et al., 1998). Such assessments must be comprehensive, analyzing strengths and weaknesses within neighborhoods, families, schools, and individuals. They should use multiple sources of information, including interviews with individuals and focus groups, self-report surveys of adolescents, and pre-collected data or records (Gendreau, Gaggin, and Smith, 1999; Wandersman et al., 1998). Encouraging community members to participate in this assessment is also important (Wandersman et al., 1998). In fact, many researchers have advocated the creation of community planning boards that include youth, parents, school administrators and teachers, healthcare and social services professionals, law enforcement agents, and business owners (Arthur and Blitz, 2000; Webster-Stratton and Taylor, 1998). This approach will result in a more accurate and broader assessment of the community's problems and will ensure that new programs are consistent with the beliefs and values of the community. Moreover, it will foster a shared sense of responsibility for the community's troubles. In fact, research has demonstrated that when communities take ownership of their problems and encourage members to be involved and active in addressing them, interventions have a greater likelihood for success (Arthur and Blitz, 2000; Everhart and Wandersman, 2000). In the Blueprints initiative, two of the most successful

replications occurred in a state-sponsored effort in Washington that assessed the risk levels for future delinquency of juveniles entering the justice system and, based on this information, assigned them to one of the four research-based programs selected by the state.

Needs assessments must also include detailed analyses of programs already occurring in the community, and also evidence of their quality of implementation and effectiveness (Wandersman et al., 1998). This approach should help prevent duplication of services, which can drain resources and frustrate both the implementors and targets of the intervention. For example, one of the Blueprints Nurse-Family Partnership sites was competing for clients with a similar program offered by another agency, and this situation led to some frustration among the nurses, who were not able to achieve the targeted number of clients they had anticipated. Competition for foster parents between child welfare agencies and the Multidimensional Treatment Foster Care program resulted in startup delays in two MTFC sites. As a third example of the problem of program duplication, teachers implementing the LST Program often reported that their students "tuned out" alcohol- and drug-related lessons because "they had heard it all before."

Applicants were carefully screened to determine whether they had too many prevention programs and, if so, they were encouraged to either drop programs or implement them in other settings or at other times. It was recommended that sites rid themselves of programs that were not effective or were not being implemented with fidelity, and that they assess why and how their attempts to initiate a new program had failed so that they did not repeat these mistakes in the future. Across all the Blueprints sites, programs that complement rather than detract from or overlap with one another were found to have a much better chance of success (Arthur and Blitz, 2000; Wandersman et al., 1998).

A final and related aspect of needs assessment is ensuring that the population targeted for change is an appropriate match for the program under consideration. To this end, stakeholders should be aware that research-based programs are typically designed for particular age, ethnic, or gender groups, and results cannot be generalized to other populations. For example, universal intervention programs are designed for all individuals in a specific setting, such as a school or classroom, regardless of risk, and this approach to prevention differs from an intervention that targets individuals already involved in or at risk for a particular behavior. In the LST initiative, local site coordinators and school administrators often wanted students with existing drug problems to receive this curriculum because they "needed it the most." In these cases, schools were reminded that these students would very likely receive no benefit from the program because

it was not designed for them, and resources would be better used to provide them with a treatment program designed to reduce use rather than prevent it. Similarly, agency administrators that had adopted Multisystemic Therapy for their chronic and violent juvenile offenders often wanted to use the program to treat less serious problem behaviors or younger children with conduct disorders (i.e., populations for which the program was not intended or evaluated). Although many of the techniques may be useful with other populations, administrators were reminded that one of the major goals of the program is to prevent serious crime and out-of-home placements at a cost savings. Implementing this program with less serious populations may not achieve the cost-savings benefit that makes this program an attractive alternative to incarceration.

Assessing and Maintaining Resources

When considering a potential program, communities must assess whether they have the financial and human resources needed to successfully implement it. It is also important for program designers to be clear and comprehensive in identifying the costs incurred when replicating programs. Often hidden costs associated with programs do not become apparent until after implementation begins, and when organizations cannot meet those costs, implementation failure is a possibility. For example, one Functional Family Therapy site failed when they did not understand the costs necessary to provide clients with the required assessment tools or the onsite travel costs for technical assistance visits. Although these costs were minimal, they were a major barrier to this agency, although this was only one of several major obstacles.

If communities strongly support a particular program, they should be prepared to spend some time garnering financial resources. Often, this can be achieved by soliciting federal, state, or local grants, particularly if sites are replicating science-based programs. Interagency collaboration can also help generate financial resources. For example, in the school-based initiatives, school districts often collaborated with outside prevention agencies who provided personnel to teach or coordinate the project, and these agencies often pledged to raise money to sustain the project after the Blueprints grant ended.

In terms of human resources, most research indicates that the presence of a program champion is critical for the successful adoption of a new initiative. Having even one strong advocate for the new initiative within an organization can be crucial for garnering support, motivation, and resources to launch the new program. As noted above, readiness for change is not easy for all

individuals, and program champions are often responsible for sharing information regarding a new program and inspiring others to undertake new projects. Champions that come from a mid-range position of authority work out quite well (Backer, 1995). Typically, these individuals have enough power to effect change but do not appear to be forcing others into action. For example, within schools, school principals make excellent champions/coordinators, while this role is not as easily filled by either teachers or school district personnel. The former are typically too busy to undertake this job and do not have the authority needed to adopt new programs, while the latter are too far removed from the reality of the classroom in which the new curriculum is to be delivered. Also, the most effective and long-lasting champions tend to be self-appointed and have a natural interest in the new initiative. Too often, personnel find themselves thrust into the role of champion/coordinator without the necessary skills, time, or inclination to perform the duties. For example, the Blueprints experience has revealed several instances when school district personnel were forced into a coordinating position, despite the fact that they did not have a good rapport with others, were unused to coordinating a multischool project, and were not particularly motivated to ensure that program replication ensued in a timely manner and in accordance with project guidelines. The project champion is also critical in monitoring implementation and ensuring continued support and resources for the project. These factors will be discussed in more detail in the next chapter.

In addition to the program champion/coordinator, employing an outside consultant who is familiar with the program, will assist in preparing an implementation plan, and can help sites avoid common implementation problems is important (Backer, David, and Soucy, 1995a; Webster-Stratton and Taylor, 1998). Typically, the consultant is also charged with providing training for key participants and emphasizing the necessity of program fidelity. For this initiative, the Blueprints team was fortunate to be able to provide this assistance in a variety of ways. The Blueprints staff monitored sites' performance in replicating the program and communicated the problems and solutions generated in other sites. In addition, the designers of the programs (or their designated trainers and representatives) provided ongoing training and technical assistance to sites. These providers were not only able to generate support and enthusiasm for the program during the feasibility visit and subsequent training workshop(s), but also provided support throughout the project. Often, individuals implementing new programs feel isolated and may become easily discouraged if they do not see immediate results or if they are having difficulty bringing a program to life. In these cases, program consultants can work one-on-one with practitioners to make implementation more successful.

Preparing for Implementation

For maximum success, prevention practitioners should develop a well-conceived plan for implementation that details the staff who will implement it, the coordinator(s) who will oversee implementation, and the population who will receive the services (Backer, David, and Soucy, 1995a; Wandersman et al., 1998). In addition, practitioners must be aware of potential obstacles to successful implementation and consider strategies for overcoming these problems. This requires a thorough understanding of the program requirements. In the Blueprints initiative, applicants were strongly recommended to read the Blueprints books to learn more about the nature of the programs, the content of core components, and potential barriers to success (as well as recommendations for how to avoid or overcome these obstacles). Thus, planners were more fully aware of the requirements of the program and how to achieve them. In addition, applications described important aspects of the program and forced practitioners to consider how these requirements would be achieved. For example, applicants were asked to describe the dosage of the program that would be provided and how often elements would be delivered, by whom, to whom, and so on. Applicants also were encouraged to discuss implementation details with the individuals who would be directly involved in the project to ensure that these goals could be met.

Unfortunately, sites' implementation plans were sometimes inaccurate or misleading. In many cases, this occurred because applications (and grants) were completed by persons with little or no knowledge of the problems that may be encountered by front-line staff in adopting a new innovation. For example, one outside agency that had carefully detailed the times and dates when the LST Program would be offered had never consulted the participating school. (Not surprisingly, this site was to become the first failure.) Events like this highlight the importance of verifying application details at feasibility visits and asking key participants for their assessments of stated plans.

Once sites were selected for inclusion in the project, a contract was created between the Blueprints team and the applicants. The contract detailed the major requirements of the program and clearly stated each party's responsibilities in fulfilling them. Researchers have stressed the importance of such documents (Everhart and Wandersman, 2000; Lynch et al., 1998; Orpinas et al., 1996). These contracts were instrumental in informing key participants of their obligations early on in the project. In fact, for the school-based programs, these contracts were required to be signed and returned with applications, so that school superintendents and principals fully

understood the extent of their involvement in the program and were committed to fulfilling these obligations. The documents provided a written record of responsibilities and could be used to remind sites of their pledge to support the program if they were having implementation difficulties.

Once an organization or community begins program implementation, it faces additional challenges that can diminish the effectiveness of even the most exemplary prevention programs. For example, failure to commit time and resources to adequate training, hiring implementors who lack the appropriate skills to deliver the program, insufficient organizational and key leader support, failure to provide ongoing support and technical assistance, and lack of program monitoring can all weaken implementation efforts. These factors will be described in detail in chapter 4.

Chapter 4: Challenges of Implementation

In the past 10 years, several federal, state, and local agencies have become increasingly concerned that the programs they support should demonstrate positive effects. Most federal agencies, including the Bureau of Justice Assistance, the National Institute on Drug Abuse, the Office of Juvenile Justice and Delinquency Prevention, and the Centers for Disease Control and Prevention, have supported the effort to evaluate and replicate programs showing positive or promising results. In fact, through a national effort to understand "what works" and outline a series of "best practices," federal agents, legislators, researchers, and practitioners have produced several lists of preferred programs.

Discovering what works, however, does not solve the problem of program effectiveness. Once models, blueprints, or best practices are developed, practitioners are faced with the challenge of implementing programs properly. A poorly implemented program can lead to failure as easily as a poorly designed one. As Harris and Smith (1996, p. 183) have argued, "the primary cause of failure and success rests with the ways in which policies and programs have been implemented." While discussions regarding program development and evaluation have often ignored the topic of implementation quality (Dane and Schneider, 1998; Durlak, 1997; Domitrovich and Greenberg, 2000; Gresham et al., 1993), a few researchers have begun to systematically examine ideal implementation conditions (Ellickson and Petersilia, 1983; Gottfredson and Gottfredson, 2002). Some have noted a number of organizational, staff, and environmental features necessary for program success. Others have argued that the key conditions for program success will vary by program, agency, and stage in implementation (Goodman, 2000). More often than not, the lists of key ingredients for implementation success are based on case studies or researchers' practical experiences rather than on systematic analyses of common implementation barriers (for exceptions, see Ellickson and Petersilia, 1983; Gottfredson, Gottfredson, and Skroban, 1998; Petersilia, 1990).

Blueprints Process Evaluation

The Blueprints process evaluation was designed to systematically measure common implementation barriers experienced across a variety of contexts and programs. Focusing on the quality of implementation of nine different programs, the Blueprints team closely monitored and

evaluated the quality of implementation across 147 sites. The types of agencies responsible for implementing these programs included elementary schools, middle/junior high schools, high schools, state-supported health agencies, private treatment organizations, and nonprofit community agencies. In addition, organizations differed in their structure, mission statement, leadership, funding sources, and staffing policies. The Blueprints team used several methods to evaluate implementation quality. In the violence initiative, in which eight of the Blueprints programs were implemented, a series of questionnaires were constructed to measure how well and to what extent agencies had accomplished such key program elements as securing funds and resources, establishing linkages with other agencies, hiring and training staff, completing core and critical program elements, and providing the recommended dosage and duration of the treatment. Whereas a set of common questions were asked across eight programs, a series of questions were developed to measure the quality of implementation within each program. These questionnaires were administered once every 4 months for 2 years. In the Life Skills Training (LST) initiative, questionnaires were administered once a year over the 3-year implementation period. This change in the standard procedure was necessary because of the brevity of the program (15 sessions in year one, which could be implemented once a week or more frequently as a mini-course). During LST implementation, teacher adherence was monitored by local observers who made unannounced visits to each teacher's classroom to observe lessons. Such quantitative instruments provided the tools to understand which components were the most powerful determiners of implementation success. A series of qualitative questions were developed to allow the researchers to describe and evaluate implementation barriers.

With this systematic research design (see appendix A), the Blueprints team discovered and validated the importance of a number of conditions necessary for successful implementation (see also Fagan and Mihalic, 2003; Mihalic and Irwin, 2003) The following provides a discussion of the ways that organizational, staffing, program champion, and proactive technical assistance factors influenced implementation quality.

Critical Components of Successful Program Implementation

Effective Organization

Organizational features remain the most commonly documented factors determining implementation success. Such characteristics as the nature, structure, history, philosophic traditions, economic standing, and stability of organizations have been considered influential forces in program implementation. Gendreau, Goggin, and Smith (1999) have argued that organizations need to remain flexible, efficient, and nonconflictual when solving problems. In addition, others have reported that agencies with clear lines of authority are most likely to solve problems in a timely manner (Ellickson and Petersilia, 1983). Timely problem solving was an important factor in implementation success. During the early stages of implementation, most programs found it difficult, yet necessary, to complete a number of tasks including hiring and training staff, gaining legal approval, setting up administrative systems, raising funds, and recruiting clients. Sites that had failed to complete these startup tasks quickly were at risk for implementation failure. These tasks were more difficult when large agencies were involved in implementation. Though such organizations tended to have clear authority hierarchies (i.e., everyone knew who was in charge), they were often very slow in achieving goals due to lengthy administrative and bureaucratic requirements. For example, it was often difficult and time-consuming for large districts to plan teacher training workshops. Such workshops required the presence of several teachers from many schools. School administrations not only had to approve the release time for teachers, but also had to determine the best days for training and the best methods for allotting substitute teachers.

Another influential organizational feature cited in the literature is the presence of administrative support for the implementation (Coolbaugh and Hansel, 2000; Dunworth et al., 1999; Ellickson and Petersilia, 1983; Gager and Elias, 1997; Gendreau, Goggin, and Smith, 1999; Petersilia, 1990). Data from the Blueprints study confirm this finding. Lack of administrative support was present in every case of failed implementation. In some cases, administrators had expressed support during early stages of implementation, but became less interested over time. For example, one elementary school principal initially welcomed the implementation of the PATHS program. The principal's initial zeal soured, however, as he learned from teachers how much time and

energy were needed to implement the program. After 8 months of implementation, the principal decided to appease overworked teachers by stopping the implementation of PATHS. In other cases, administrative turnover resulted in either site failure or decreased motivation among staff. For example, during the implementation of LST, principal turnover resulted in two schools withdrawing from the project.

Four ingredients made administrative support a key factor in program success: resources, leadership, power, and communication. New programs required considerable resources including staff time, money, and materials. In most cases, administrators controlled resource allocation. Administrators also were influential and respected organizational leaders who articulated the overall goals and vision of the agency and encouraged cooperation and coordination. Administrators who openly communicated support for a new program within and outside of the agency increased staff motivation for programs and helped everyone recognize the importance of the work at hand.

In school-based programs, strong principal support is a primary consideration (Gingiss, 1992; Gottfredson and Gottfredson, 2002; Kramer, Laumann, and Brunson, 2000; McMahon et al., 2000). Encouragement was critical early in implementation, when principals could build favorable philosophic climates for the new innovation. Administrators who spoke about the importance of violence prevention helped teachers see the larger importance of difficult as well as mundane tasks. Principal support was also important in fostering teachers' commitment to the program. Heavy demands on teachers' time often made many teachers leery of implementing new programs. Administrators who remained enthusiastic about the program helped maintain teachers' motivation and interest in these new, and often time-consuming, programs.

Unfortunately, teachers often remarked that their principals knew little about the new curriculums and, in some cases, this lack of knowledge threatened to undermine the quality of implementation and left teachers feeling frustrated and angry. For example, in one site, principals had determined that the program would be taught during physical education classes but did not consult with teachers regarding this decision. Even after teachers emphasized that this plan was not conducive to successful implementation—physical education classes typically lacked adequate classroom facilities and had very large enrollments—principals refused to change their decision. Lack of principal support led, either directly or indirectly, to all instances of program failure in Blueprints school-based projects. In two sites, teachers demanded that the new program be dropped so that they could resume teaching a drug prevention program that had been implemented previously and,

in both cases, principals yielded to these demands. These principals may have lacked full commitment to the program from the beginning of the initiative, as the program was applied for and taught by outside agencies.

Administrators also held the power to make changes within the agency to accommodate new programs. The Blueprints programs presented new intervention approaches. With these new approaches came the need to make many structural, policy, and work routine changes. For example, the Blueprints therapeutic programs required that therapists work intensively with a few clients. In agencies where large caseloads were the norm, administrative mandates were necessary to ensure that therapists could decrease their caseloads enough to comply with the model program. In fact, the failure of administrators to make key changes in work routines threatened the success of two Functional Family Therapy sites. In both sites, therapists failed to work with the optimum number of clients recommended by the FFT technical assistance providers. In both cases, therapists were not relieved of their non-FFT caseloads and did not have the time to work with new FFT cases. In both scenarios, administrators were the only individuals who had the power to make the necessary changes. In addition to being able to reduce caseloads, administrators also held the power to change flex time compensation policies—a necessary requirement for interventions providing 24-hour services to clients.

School-based programs also relied on the power wielded by administrators. Most important was the school administrators' ability to ensure that teachers attend mandatory training workshops, especially when these trainings occurred during vacation breaks or necessitated arranging for substitute teachers. It was also essential that principals allow teachers flexibility in their delivery of the new curriculums. In many cases, teachers found completing a lesson in a standard, 50-minute period difficult, and principals often approved and helped arrange extensions of class time so that teachers could cover the requisite amount of material.

Another important organizational feature is open and clear communication among all key players involved in the innovation (Harris and Smith, 1996; Kegler et al., 1998). The organizational leader must be a good communicator who is able to convince staff to embrace the values and ideals of the new program. This means openly communicating with staff about the program and involving others in the planning and decisionmaking processes. Failure to openly communicate with staff who will be responsible for implementing the program can lead to resistance and ultimate failure. An example of communication failure occurred in one of the treatment programs when two agencies fought to have final jurisdiction over the client. The involved staff failed to communicate

about the treatment regimen and, in the absence of any coordination between the agencies, a client was sometimes pulled in two opposing directions. The Blueprints team became involved in this situation, which threatened the viability of the program, by convening a meeting that involved staff from both agencies, the technical assistance provider, and Blueprints staff. Problems were discussed, and the resolution was to appoint the case manager in the treatment agency as the lead person in the management of the youth. It was also suggested that regular meetings be set up to keep both agencies informed about the clinical progress of the youth and to discuss problems.

Researchers have noted that agency stability, including low staff turnover, remains a key to implementation success (Gendreau, Goggin, and Smith, 1999; Gottfredson and Gottfredson, 2002; Lynch et al., 1998; Mears and Kelly, 2002; Petersilia, 1990). Loss of staff proved to be a problematic and stressful aspect of the Blueprints replication project, but rarely caused failure. Staff turnover, however, did present sites with many challenges. In many cases, the loss of key participants slowed implementation progress as work was typically suspended until replacements could be found. In the case of FFT, sites that had lost therapists were unable to maintain implementation fidelity for periods of time and often had to wait until new therapists were hired and trained before they could build their optimal caseload size. Each step (hiring, training, building a caseload) could take several weeks to several months. Thus, staff turnover meant that FFT sites would periodically fall in and out of fidelity. Although implementation was delayed and program fidelity suspended for short periods of time, the hiring of new staff proved to be a periodic upset to the implementation of therapy programs rather than a more serious, long-term threat.

Contrary to the trend in Blueprints' data, staffing problems did prove threatening to the implementation of one school-based site. In this particular case, the site's school district superintendent left the district early in the implementation process, and the participating schools could not hire staff to deliver the curriculum or plan a teacher training until a replacement was found. This process lasted several months and threatened to drag on until the end of the school year, which would have resulted in site failure. (Sites often did not notify the Blueprints staff in a timely manner when attrition occurred, which delayed implementation even further.) Once the problem was identified, the site had to scramble to find replacements, solidify their commitment to the initiative, and, in nearly all cases, provide additional training to new staff.

Teacher turnover was one of the primary problems confronting school sites. Many schools preferred to schedule their annual training workshop in the spring, but often lost staff over the

summer, which necessitated additional training in the fall of the new school year. When teacher loss occurred during the school year, school administrators often hired short-term substitutes and required that they teach the new program, even though they were unfamiliar with the goals and objectives of the curriculum. As others have found (Connell, Turner, and Mason, 1985; Taggart et al., 1990; Ross et al., 1991), these untrained staff often had less motivation to teach the program than trained staff and often did so in an incomplete manner that did not adhere to the program model. Thus, the Blueprints team worked closely with the site to train new teachers, which often entailed the TA provider making an unscheduled site visit to work one-on-one with the instructor. (This alternate form of training was usually not as efficient or thorough as having teachers attend a typical training workshop where they could interact with other teachers.) Fortunately, close contact with the TA provider and strong administration support often compensated for staff turnover so that problems were resolved once staff were replaced and trained. When sites experienced high turnover and low administrative support, however, implementation failure was inevitable. For example, in one of the school-based sites, failure occurred when an outside agency could no longer supply prevention specialists to deliver the curriculum and the participating school, which lacked both teacher and principal commitment to the project, refused to take on the responsibility of using school personnel to teach the program..

Competing philosophies can compromise implementation efforts (Mears and Kelly, 2002). For example, when agencies have historically embraced theories that compete with the philosophies and perspectives underlying a newly implemented program, ideological conflicts can ensue and disrupt implementation. In fact, the implementation of Blueprints programs usually required staff, administrators, and agencies to make particular philosophic leaps. A few individuals found accepting these new approaches and their underlying philosophies difficult. Since Blueprints staff screened for extreme philosophical differences in the early stages of a project, few of the philosophic conflicts ended in site failure. TA providers usually detected and directly addressed ideological conflicts early in the planning stage or at initial training. In addition, TA providers often presented empirical data supporting the effectiveness of their program. After this information was presented, many staff members eventually bought into the new modes of service provision. Although staff members who completely failed to embrace the new initiative usually left the project, personnel sometimes remained who were skeptical about certain aspects of the program's underlying philosophy or approach to prevention. For example, teachers implementing the Life Skills Training curriculum often refused to teach a social skills lesson that included references to dating, even though trainers stressed the importance of providing students with this information. Although these teachers asserted that their middle school students were not

developmentally ready to discuss physical attraction to others, other teachers at the same school often remarked that students did need to discuss these issues and were, in fact, initiating dating relationships. In other situations, instructors often inserted scare tactics into the LST curriculum (such as showing students blackened lungs) or neglected the use of interactive teaching techniques for the use of more standard and comfortable didactic methods. Though trainers relayed that such techniques had not been proven effective in reducing adolescent drug use, teachers felt that these methods worked and wanted to continue using them as they had in the past.

Philosophic conflicts also emerged during the replication of therapy programs. A few therapists were at odds with the newly adopted programs because they were accustomed to and believed in the value of individualized therapy. In one extreme, but very rare, example, a technical assistance provider for the Multisystemic Therapy program encountered a vocal opponent to some of MST's drug intervention approaches. During a training session where agents from numerous state agencies were invited to attend, the TA provider described how MST encourages parents to link children with prosocial activities. The TA provider noted an example of an MST therapist who worked with a family to initiate a neighborhood basketball team. Once the team was established, the parents were delighted to find that their son maintained an involvement in the team and decreased his illegal activities. As an aside, the TA provider noted that the neighborhood basketball team also had a positive effect on the coach, an individual who, before the inception of the team, had been a notorious drug dealer in the neighborhood. Although he did not cease his drug dealing altogether, the coach refrained from dealing drugs while he coached. Where the MST therapist felt that this was, given the circumstances, a positive outcome for all concerned, an administrator from one state agency disagreed. Noting that this particular state held a strict "zero tolerance" approach to drug use and drug dealing, he argued that the fledgling MST team would not be able to implement such "creative" interventions in that state.

Although not frequently addressed in the literature, strong linkages among multiple agencies can bolster implementation quality (Ellickson and Petersilia, 1983; Freudenburg, 1998). Petersilia (1990) alludes to the importance of interagency linkages by arguing that programs fare better when "larger systems" are receptive to the program. Programs that require but do not obtain cooperation across agencies typically attain only low or moderate levels of effectiveness (Ellickson and Petersilia, 1983). Within the Blueprints project, a few sites confronted linkage barriers. Threatened with failing to get enough clients to keep programs afloat, these sites often found themselves reaching out to such agencies as healthcare services and juvenile courts to establish better rapport and increase interagency support. To foster these relationships, key

participants from all organizations were invited to feasibility visits, where program designers presented the history, philosophy, and effectiveness of the program so that all parties were aware of the nature and requirements of the program. During implementation, TA providers and Blueprints staff worked closely with sites that were having trouble recruiting clients and/or maintaining close ties to other agencies to resolve their problems. Sites were encouraged to establish better lines of communication among parties—by meeting informally with one another to discuss barriers to implementation and working together to solve these problems. For example, when outside agencies provided prevention specialists to deliver the LST curriculum, teachers were often skeptical about the teaching ability of the outsiders or upset by what they considered an intrusion into their classrooms. However, these problems were often easily resolved once teachers and prevention specialists collaborated to allow increased teacher participation in delivering the curriculum or better scheduling of classes. Thus, linkage barriers were eventually overcome once relationships were built and trust and communication were established.

Qualified Staff

Whereas administrators can determine program success through the many decisions that must be made during the initiation and implementation processes, staff members also exert a powerful influence on implementation quality. Data from the Blueprints study support the common assumption that staff support and motivation are necessary for replication success (Elias and Clabby, 1992; Ellickson and Petersilia, 1983; Gendreau, Goggin, and Smith, 1999; Hunter, Elias, and Norris, 2001; McCormick, Steckler, and McLeroy, 1995; Petersilia, 1990; Taggart et al., 1990). Within the Blueprints initiative, lack of staff support usually resulted in a generalized low morale and eventual staff turnover. Loss of nonsupportive staff members, however, occasionally increased general staff satisfaction. Staff members needed to encourage each other to maintain enthusiasm for the project. Often, program implementers feel isolated in their attempts to master a new initiative and believe they are the only ones facing challenges. To realize that others encounter similar problems is extremely beneficial. To this end, program personnel were encouraged to meet periodically to discuss the program and share their insights regarding implementation problems and solutions for overcoming them. This collaboration often saved time for others, which further enhanced their satisfaction with the program. For example, teachers often shared ideas for making classes more lively or creating assessment tools to test students' knowledge of the program. In the family therapy programs, regular meetings in which client progress was discussed provided insights to new therapeutic techniques or methods for

intervening with clients. Sites where staff meet regularly tend to have greater support and enthusiasm for the program, as well as greater fidelity to the research-based model (Ellickson and Petersilia, 1983).

Staff buy-in and support functioned differently in this study than past research has suggested. For example, Gendreau and colleagues (1999, p. 184) have argued that staff need to "participate directly in designing the new program." None of the direct line staff hired in 147 sites had any direct involvement in program design or early planning. Whereas participation can theoretically enhance staff support, data from the Blueprints project support the idea that buy-in can be obtained through training and ongoing technical assistance.

Staff support was tied to the quality of training and TA provision. Although many staff members reported being unsure about their abilities to implement their programs, insecurity usually decreased after their second training. Program participants reported increased comfort and skill in delivering the program once they had gained familiarity with the new practices involved. For example, teachers generally reported more satisfaction and support for the LST curriculum in the second year of implementation, after initial scheduling problems were overcome and instructors had to spend less time preparing lessons. Additionally, fidelity increased in the second year of the project as teachers became more confident in using the curriculum.

Staff skills play an important part in implementation quality (Gendreau, Goggin, and Smith 1999). Outcome and process research findings generally support the idea that staff credentials and skills can improve program effectiveness (Kegler et al., 1998; Lynch et al., 1998; Taggart et al., 1990). Blueprints data support this finding. Many of the Blueprints programs clearly stipulated that staff members should have completed special training and/or have credentials in particular modes of service provision. For example, in the Nurse-Family Partnership program, designers suggested that staff members should be trained and certified nurses. The underlying rationale is that trained, experienced nurses are able to provide better health-related services and will have more credibility with clients. Therapy programs often required organizations to hire therapists with master's degrees or equivalent experience. Training for therapy programs was designed to build on a base of clinical knowledge—a difficult task when staff had not gained this knowledge. Although the Life Skills Training programs did not require delivery by certified teachers (it could be taught by counselors or prevention specialists, for example), the interactive lessons were more effectively taught by those experienced in classroom management, time management, and ability to deliver a formal curriculum. Less experienced instructors tended to report more difficulty in completing

lessons in a standard class period or in making the lessons exciting for students, whereas experienced instructors intuitively knew when and how to curb student discussions and how to utilize a combination of didactic and interactive teaching techniques. Thus, sites that hired and utilized staff with the requisite credentials faced fewer staff-level implementation barriers. In fact, sites hiring staff with less than required credentials, less experience, or less training had higher turnover rates, more resistance, and less staff satisfaction. Although this finding does not negate the need and value of volunteer staff, organizations should be aware that these individuals may need additional training and support to improve their ability to deliver programs with effectiveness and fidelity.

In addition to staff credentials, findings from the Blueprints initiative, as well as other implementation projects (Coolbaugh and Hansel, 2000), demonstrate that adequate financial compensation afforded to staff members makes a difference in implementation. Some Blueprints programs allowed sites to use volunteer staff in coordinating roles, but findings suggest that sites relying on volunteer staff progressed more slowly than those with paid members who could devote the time and energy to keep the program alive and functioning smoothly. Early implementation work proved considerably time consuming. Volunteer staff members often found themselves tackling enormous demands and, without adequate financial compensation, sometimes lost motivation. Often they found themselves tackling the demands of program implementation on top of their full- or part-time job. In these cases, few found themselves with the same amount of time to devote to implementation development as paid practitioners.

Although payment to instructors for teaching prevention lessons is considered by some a dangerous precedent, the highest quality implementation of the PATHS program occurred in a site where teachers were provided 4 hours pay per month for planning lessons. This small stipend highlighted the administration's commitment to carry out this program, despite facing similar obstacles (especially lack of time) as encountered in other sites. The determination of the key players in this site motivated these teachers to find innovative ways to integrate the PATHS curriculum into their daily routines. One of the Bullying Prevention Program sites also provided their coordinating committee members with a small stipend of up to $100 each year as an incentive for their time spent in planning the details of the schoolwide program. This site also achieved a full and high-quality implementation of the program. The money is not what necessarily causes success since the stipends are quite small, but it represents the determination of the administration to make the program work. Although the Blueprints initiative does not endorse payment of stipends, it is understandable how a monetary incentive would demonstrate to

teachers the importance of the project and their role in it. However, this type of motivation can be engendered in many other ways, especially when a principal shows active support of the program by attending training, observing classes, and setting up meetings with the teachers to discuss the implementation.

Lack of time is often cited by program staff as a major barrier to implementation (King, Wagner, and Hedrick, 2001). Many paid staff members implementing Blueprints programs suggested that the time demands of starting a new program were daunting. Therapists suggested that implementing new therapy programs demanded much more time than they had anticipated. In fact, one implementation failure came when clinical staff found themselves unable to gain financial reimbursement for the extra time spent working on FFT. This agency relied on medicaid reimbursement. Since their time spent learning to work with a new clinical model did not count as billable time for Medicaid, and because they had fewer billable cases with the smaller caseloads demanded by FFT, they could not continue implementation. In addition, therapy programs such as Multisystemic Therapy required therapists to be on 24-hour call. Sites implementing this program found that they needed adequate flex time policies to accommodate this aspect of the program.

Coordinating a new initiative requires a tremendous investment of time. Many schools had assigned a half-time position to these duties, usually as a requirement of the grant. Schools that could not afford this position were phased out in the initial selection process. Over the course of implementation, a half-time position was often not adequate to fulfill the many duties required, especially in the first year of the project and if multiple schools were involved.

Teachers frequently mentioned time constraints as a major barrier to implementation (see Kramer, Laumann, and Brunson, 2000). Given the high state and national demands to increase the test performances of public school students, many instructors were understandably worried that teaching drug or violence prevention programs would take away from time that should be spent on core subjects and test preparation. In the case of Life Skills Training, many schools integrated the program into their health classes, where it fulfilled many curriculum requirements. Other schools did not have health classes and were forced to deliver the program in classes such as science, math, or English. Teachers had to work harder to integrate LST into these subjects, and many were creative in using the concepts to reinforce basic academic skills, such as requiring students to write essays in English classes or determine the annual cost of cigarette smoking in math classes. A few teachers were even motivated to match the program to their state curriculum

standards, which helped persuade teachers (and parents and school administrators) that the program was a worthwhile use of classroom time.

Integration into the school's daily operation has been identified as a key factor in ensuring program success and longevity (Gager and Elias, 1997; Gendreau, Goggin, and Smith, 1999; Gottfredson and Gottfredson, 2002; Kramer, Laumann, and Brunson, 2000). When teachers and administrators recognize that new programs serve a larger purpose for the school, they are not only more likely to adopt the initiatives, but also feel ownership for them (Fullan, 1992). Moreover, students can also sense when their teachers feel lessons are important and worthwhile and are likely to react in a similar manner. For example, many teachers have characterized the LST program as fluff. This is particularly evident when outside prevention specialists teach programs in schools and teachers feel they are wasting class time. In many cases, students' behavior mimics that of their teacher: when teachers are disruptive or obviously uninterested in lessons, so are students. Similarly, school-based programs are often placed in auxiliary subjects such as physical education or home economics and are considered easily disposable. For example, many teachers implementing a program in physical education classes did not have adequate classroom facilities in which to teach or were burdened by combined classes totaling more than 50 students, which made implementation very difficult. In these cases, principals were often reluctant to make space for the program because they felt doing so would detract from more important subjects. In interviews with school administrators, those most committed to continuing the program when the Blueprints project ends are those who believe the curriculum fills a need and where it is well integrated into school operations.

Program Champion

According to the literature, successful implementation efforts need strong leadership and key personnel to coordinate and conduct the program (Ellickson and Petersilia, 1983; Petersilia, 1990). A distinction is usually made in the literature between top leadership and a project director or coordinator who champions the innovation and guides its day-to-day operations. Projects that have a highly committed champion have greater success (Ellickson and Petersilia, 1983). Data from the Blueprints project generally support this finding. Those directing or coordinating implementation efforts needed to be influential members of an organization and have considerable rapport with organization administrators and other staff members.

Having good rapport with administrators ensured that leaders would receive the necessary authority and resources from the organization to make a program work, which became particularly important in school-based implementations. In several examples, outside agencies received grants to manage the implementation of programs in schools. In some cases, program champions from the outside failed to establish good rapport and communication with the participating schools and, as a result, faced resistance from both principals and teachers. In fact, three school-based program failures occurred when outside agency members failed to garner support from teachers and principals. However, effective collaboration between outside agencies and participating schools was often achieved, particularly when agencies had a long history of providing needed services to students, were well respected in their communities, and espoused the same philosophy towards prevention as the schools. In these cases, principals and teachers appreciated having extra help implementing and organizing the program, and prevention specialists often reported that students were excited to have new instructors in the classroom. Classroom teachers were particularly supportive when outside teachers were knowledgeable about the program and skilled in classroom management.

However, program champions who were "inside" the implementing agency could also be ineffective, particularly if they had little power to effect change. For example, one program champion lacked substantial authority within her agency. Although highly motivated, she was not able to garner much support for the program among administrative staff. In the end, administrators failed to commit the money necessary to implement the program. For the school-based programs, champions were often district-level personnel such as Safe and Drug-Free School Coordinators. Although they theoretically had ties to all schools within their district, these individuals were nonetheless removed from the daily activity of teachers and schools and often did not understand the realities of making a program work at the individual level. As a result, school district administrators often failed to establish the communication and support needed to achieve basic tasks, such as organizing teacher training workshops, gathering schedules of implementation, and keeping teachers and principals informed of the overall progress of implementation. Moreover, principals who failed to fully support the project often asserted that the initiative was forced on them by the school district, and they resented not being included in such an important decision. This experience lends further support for the importance of local (or school) initiations in adopting and implementing a program (Gottfredson and Gottfredson, 2002).

When agencies choose to adopt new programs, many philosophical and structural changes need to take place to allow the new programs to thrive. Similar to charismatic leaders, strong champions

pique individual excitement for new approaches. Moreover, they can ease the tensions associated with change by espousing an appealing vision for the future and inspiring motivation among those around them. Not only must staff members support new methods of "daily business," but they often find themselves committing more time and resources to the project. The implementation of the Bullying Prevention Program in one school provides an example of the importance of program champions. During the first year of implementation of the program, staff expressed reluctance to create and clearly communicate specific antibullying rules (a core component of the program) for fear that specific antibullying rules would undermine a pre-existing code of conduct in the school. The program champion at the school creatively solved this problem by hosting an antibullying poster contest. The winning poster (one that expressed a basic antibullying rule) was clearly displayed throughout the school. Thus, through creativity and dedication to the spirit of the program, champions can help ease conflicts and resistance within their agencies.

Garnering widespread support for the new innovation is particularly important because champions, no matter how committed to a cause, may leave organizations for various reasons, and a possibility always exists that a program will fail once the key stakeholder has left. For example, in the LST project, one site failed when the champion was no longer respected by her peers and had not elicited much support for the program in the participating schools. When she was asked to step down from her role as teacher and coordinator, no one was willing to fill these positions. In a similar example, one site implementing a family therapy program failed after the program champion left the agency. In this case, the program champion, although a strong advocate for the therapy model, had done little to generate motivation within the implementing agency. Instead, she tried to carry the full burden of startup and implementation without the involvement of others. Once she left the agency, the agency staff had little interest in this intervention and decided to end the program.

Proactive Technical Assistance

The Blueprints team found that the training, guidance, advice, and monitoring offered as technical assistance helped agencies overcome and even avoid multiple implementation barriers. This finding remains consistent with studies suggesting that training is a key ingredient of implementation success (Connell, Turner, and Mason, 1985; Fors and Doster, 1985; Gager and Elias, 1997; Gingiss, 1992; Gottfredson and Gottfredson, 2002; Hunter. Elias, and Norris, 2001; Parcel et al., 1991; Perry, Murray, and Griffin, 1990; Ross et al., 1991; Taggart et al., 1990). The

technical assistance (TA) offered to Blueprints sites was a unique aspect of the Blueprints implementation initiative. As mentioned previously, local staff had played no role in designing programs and, in fact, were prohibited from making major modifications to the model. When becoming a Blueprints site, agencies agreed to implement programs according to the original and scientifically validated design. The original developers and those with extensive experience with the program served as the primary TA providers who helped agencies implement the program with fidelity.

The technical assistance included extensive initial training lasting from 1 to 5 days. This initial training was designed to provide knowledge on such key issues as how the program operates, the effects demonstrated by the program during research trials, how the individual components of the program influence change, and how best to carry out the elements of the program. Initial training was followed by one or more booster sessions designed to increase staff members' knowledge, skills, motivation, and comfort with the model. Beyond the basic goal of transferring the knowledge and experiences of the trainers, these sessions helped to decrease resistance to the program and generate enthusiasm and commitment to the program, which are necessary elements for success. All trainers were experts in the model program and successfully transmitted the necessary skills to agency staff. The initial training also helped trainers identify and address early problems. After assessing the special needs at a particular site, trainers often altered aspects of their workshops to boost the skill level of agency staff and increase staff members' competence in service provision.

After the completion of several initial training workshops, TA providers and Blueprints staff discovered some common challenges and began to identify steps that members of the sites, the TA providers, and Blueprints staff could take to make the initial training more productive. One common problem was the failure of sites to hire all staff before an initial training. In addition, some TA providers found that individuals talked during sessions, arrived late, or failed to attend parts of their workshops. School programs faced unique training challenges as principals needed to release some or all teachers from their classes to attend workshops. This was sometimes difficult to arrange and required considerable advance planning. Training workshops that included members of the administration tended to be higher quality sessions. Administrator presence sent a strong message to key personnel that the program was a priority within the agency. Administrators who attended training also understood programs better and were able to accommodate and support implementation efforts more effectively. After confronting attendance problems in a few sites, Blueprints staff sent a one-page "Training Protocols" brochure to each

site before its workshop and asked that the information be distributed to persons scheduled to attend the training. Training protocols were individualized for each program and briefly outlined the purpose of the workshop, listed all staff members that needed to attend, and outlined the Blueprints team's behavioral expectations of staff during each training.

Another problem occurred when sites arranged for all staff to attend training sessions, but failed to inform them that they would be implementing a new program. Staff members arrived to workshops without knowing why they needed to attend and thus became resistant and uncooperative. Trainers spent much time reviewing the program and informing staff of the sites' implementation plans. Sites should inform staff members of plans to implement a program, inform them of their role in the implementation, and review the basic principles and design of the chosen program before training so that staff can come as prepared as possible.

One common problem across most Blueprints sites was high staff turnover. Once an initial training was completed, many sites found that staff left the project, requiring sites to hire and re-train new staff. To address this issue, Blueprints staff recommended that sites include ongoing training costs in their budgets and that TA providers should build the capacity to provide this ongoing training. During process evaluation visits, Blueprints staff also learned that some programs had not effectively recruited clients and were unable to immediately use the principles and skills they had learned in the initial training. Therefore, sites should plan to start serving clients immediately after initial training, while the material is still fresh in everyone's minds. In a few sites where teacher training occurred late in the spring or early summer, teacher turnover during the summer months required that a second training had to be delivered in the fall when the program was scheduled to begin.

Blueprints Training Recommendations

- Hire all staff before training.
- Review program and implementation plans with staff before training.
- Arrange for administrators to attend training.
- Arrange for substitute teachers/providers for training days.
- Communicate behavioral expectations of staff during training.
- Plan for staff turnover.
- Be ready to implement program immediately after training.

After initial training, TA providers were available for regular consultation with sites. For a few programs, TA providers contacted sites once a week and scheduled onsite visits every 3 months. During these contacts, TA providers served as valuable consultants and experts who could identify implementation problems and offer useful suggestions to overcome them. For example, TA providers often detected dissatisfaction and low motivation among teachers implementing the school-based programs. In these cases, they often used telephone or e-mail consultation to suggest ways to make the lessons less demanding for teachers and more enjoyable for students while still maintaining fidelity to the model. For more problematic sites, trainers made site visits to observe classroom practices in order to provide more specific feedback and assistance. For two of the therapy programs, TA providers closely monitored therapists' skills. Multisystemic Therapy designed and validated an instrument designed to assess the extent of therapists' adherence to the principles of the program. In a few cases where therapists consistently struggled, TA providers stepped in and recommended ways to increase therapists' skills, motivation, and knowledge. In two cases, TA providers arranged for therapists to attend additional training workshops. In this way, TA providers served a monitoring role by helping to maintain fidelity to the model and a consultant role by advising sites about the ways to overcome problems. Those receiving TA seemed to value this direct contact, and, as a result, were not only more adept in providing services, but also became more energized and supportive of the initiative.

Programs that failed to provide comprehensive technical assistance often found that their sites were lagging behind in implementation and were unsure of how to proceed or how to overcome challenges. Members of some sites sought help outside their own agency by initiating contact with others who were implementing the same program in another part of the country. Some TA providers who did not have regular contact with sites often assumed that sites would inform them when they were having implementation problems. However, program staff and administrators did not always recognize their own weaknesses, or they assumed they would have to handle them on their own. Although the Blueprints staff and trainers stressed that technical assistance was available, those directly implementing the programs were often unaware that they could receive additional help or were uncomfortable asking for it.

More problematic, staff who were uncomfortable with the new initiative often reverted to previous modes of intervention and failed to realize that doing so contradicted the philosophy of the program. For example, many Life Skills Training teachers were uncomfortable or unskilled in facilitating classroom discussion, modeling appropriate behaviors, or monitoring behavioral rehearsals and would often revert back to didactic modes of teaching, including reading directly

from a teacher's manual. In the absence of a curriculum, many teachers using the Bullying Prevention Program either discontinued most of their classroom sessions or searched for other programs to implement in the classroom. One site began implementing a conflict resolution program in direct contradiction to a major goal of the Bullying Prevention Program, which states that bullying will not be tolerated (i.e., it is not an act to be mediated). These teachers were tired of the routine activities of the program and sought aids from outside the program, thus discounting their needs for further TA.

Data suggest that having manuals or a set curriculum with designed activities that are viewed as relevant, attractive, and easy to use enhances program adoption in the classroom (Blakely et al., 1987; Perry, Murray, and Griffin, 1990; Schinke, Gilchrest, and Snow, 1985; Taggart et al., 1990). In other cases, staff may have recognized their need for additional assistance and welcomed help but were too busy to solicit it. Thus, they would have greatly appreciated more proactive technical assistance. In such cases, the implementation efforts stagnated until Blueprints staff actively sought TA assistance for the site.

To date, the literature suggests that training and technical assistance are extremely valuable parts of any implementation effort. During the Blueprints initiative, Blueprints staff, members at sites, and TA providers confronted numerous challenges that revealed, in detail, how ongoing training and technical assistance function during program replication. Findings from the Blueprints initiative generally resonate with the literature that suggests that practitioners who receive complete trainings are able to implement programs more effectively (Connell, Turner, and Mason, 1985; Flay, 1999; Fors and Doster, 1985; Taggart et al., 1990), and that the most successful types of trainings tend to be those that include knowledgeable and enthusiastic trainers and site administrators (McCormick, Steckler, and McLeroy, 1995). These findings also support the idea that ongoing formal or informal training sessions can reinvigorate implementation efforts (Gager and Elias, 1997; Gingiss, 1992; Parcel et al., 1991).

Blueprints findings also point to training and technical assistance themes that may emerge in the future. For example, program designers used a variety of different approaches to training and technical assistance. Some designers decided to form for-profit organizations charged with the task of disseminating their program and providing ongoing training and technical assistance. Other designers preferred to disseminate the program through nonprofit organizations. Data from the Blueprints initiative suggest that strengths and weaknesses exist within both profit and nonprofit models. The one model that was not successful was the attempt by some programs to provide

assistance to sites before setting up an organization for TA delivery. TA providers assumed these additional responsibilities on top of a full-time job at their own organizations. This often resulted in a nonproactive TA delivery system, with TA given when requested, usually because of major problems at the site.

The Blueprints initiative helped most of the designers of these programs to create a TA delivery system that would work, not just for the Blueprints project but for the many other requests for TA that were streaming in. Throughout the 2 years (3 years for LST) of the project, these delivery systems were fine-tuned and modified. By the end of the project, most programs were able to deliver a quality package of training and TA that included both telephone consultation and site visits.

In addition, types of training and TA differed in terms of the amount of independence they encouraged in new sites. Some designers preferred that sites engage in an ongoing relationship with their training and TA organizations, which required sites to continue paying for ongoing assistance every year—a daunting expense for several sites. Other designers chose to provide training and TA for a limited time. On completing the course of training and TA, these sites were deemed proficient implementers of the model. In this model, members of particular sites, usually the program coordinators, gained the necessary expertise (as determined by program designers) to act as the trainer and TA provider for their site in the future. Thus, the expense of training and TA lasted only until site staff gained the necessary skills to sustain the program.

Findings from the Blueprints initiative suggest that every type of training and TA has strengths and weaknesses and, thus, it is impossible to advocate one model over another. Findings do suggest, however, that the way training and TA is designed (profit versus nonprofit, independent versus dependent) will emerge as core debates in the literature in the future. Also, Blueprints staff would recommend that sites examine the training philosophy of a program and compare it to their own goals before a decision is made about implementing the program.

Outside Evaluators

Although not charged with providing implementation assistance directly to sites, Blueprints staff members actively monitored sites' replication efforts and often identified times when site staff needed additional technical assistance. To assess the quality of implementation, and to gather

information regarding the barriers faced by each site, Blueprints staff visited sites every 4 months during the 2-year implementation grant. Moreover, onsite classroom observers were hired to monitor the effectiveness of the Life Skills Training program in more detail. This intense monitoring often led to the discovery of problems, particularly for sites that had little contact with trainers. When problems were discovered, Blueprints staff members were quick to contact TA providers and urge them to work with the site to develop solutions. For example, during the implementation of the Multidimensional Treatment Foster Care program, Blueprints staff learned that a few sites were having difficulty recruiting and retaining foster parents. Blueprints staff informed the TA providers of this challenge, arranged conference calls between TA providers and the sites to discuss possible solutions, and then arranged for a TA visit to one of the sites to provide additional training to recruiters.

Blueprints staff also encouraged LST sites to organize feedback sessions between teachers and TA providers at the end of implementation so that instructors could share their experiences with one another and brainstorm ways to make implementation more successful in the following year. Thus the Blueprints staff members often acted as liaisons between program implementors and TA providers and urged both parties to be more proactive in seeking and providing assistance.

Monitoring and accountability were novel experiences for most sites. Many did not at first understand the role of the Blueprints staff, but most came to appreciate the level of implementation quality they achieved through the emphasis on fidelity. In the violence prevention initiative, which included eight of the Blueprints programs, 61 percent of the site coordinators rated Blueprints as "very" or "exceptionally" helpful in implementing programs with greater fidelity. Another 34 percent believed that Blueprints was "somewhat helpful" or "helpful." Almost half (45 percent) of the site coordinators believed that the emphasis on program fidelity helped implementation quality "significantly" or a "great deal." Another 16 percent believed it "moderately" improved implementation quality. Only four site coordinators reported that it did little (n=3) or nothing (n=1) to improve quality. Eighty-four percent of the site coordinators reported implementing "most" or "all" program components, and 87 percent were "exceptionally" or "very satisfied" with the program.

Conclusion

Once an organization or community determines that it is ready to begin program implementation, a number of factors can exist that may diminish the effectiveness of even the most exemplary prevention programs. The Blueprints initiative has been undertaken to enhance the understanding of the human and systems factors that challenge the successful implementation of programs. Failure to commit time and resources, hiring implementers who lack the appropriate skills to deliver the program, insufficient organizational and key leader support, lack of motivation and buy-in of implementing staff, failure to provide ongoing support and technical assistance, and lack of program monitoring are all factors that can weaken the implementation effort. If these factors are not overcome, the result may be an inability to sustain effective programs.

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Chapter 5: Recommendations

Although information on best practices and effective programs has been developed and disseminated at federal, state, and local levels, information alone is not enough to create beneficial and enduring prevention programming. Dissemination of best practices is only the first step. The second step is promoting the actual use of research-based information (Backer and David, 1995). Information on the experiences and problems encountered in replicating programs and effective methods for sustaining quality implementation is extremely important. Prevention practitioners experience a number of problems when they begin to implement new programs, including financial, psychological, and organizational challenges. If these factors are not overcome, the end result may be poor implementation or program failure. The research on program implementation must begin to document and disseminate the significant factors facilitating individual and organizational behavior change that will sustain effective programs. Unfortunately, little concrete information is available on the factors that result in successful or unsuccessful program adoption, implementation, and institutionalization (Morrisey et al., 1997; Wandersman et al., 1998; Weissberg, Caplan, and Harwood, 1991), and limited formal study exists of intervention diffusion strategies (Backer, David, and Soucy, 1995b; Spoth, 1999).

Several federal agencies, however, have begun this important research. The National Institute on Drug Abuse (NIDA) has taken the lead by creating the Technology Transfer Program in 1989. This program is responsible for disseminating drug-related research and findings on effective interventions to treatment and prevention practitioners and for encouraging adoption and implementation of such programs. NIDA also commissioned a group of experts from different disciplines to create a monograph on technology transfer (Backer, David, and Soucy, 1995b). The monograph documents their research on and experiences with changing behavior in the individual, the organization, and the community.

The Center for Substance Abuse Prevention convened a symposium in 1999 composed of researchers and practitioners to address three questions:

- What does the research state about effective programs?
- Why are research findings not applied in prevention practice?
- What can be done to overcome this gap?

Other organizations (e.g., the Institute of Medicine's Prevention Research Cycle) have identified technology (i.e., knowledge) transfer as an important component of prevention research (Mrazek and Haggerty, 1994; Morrissey et al., 1997).

Replication and Program Strategies, Inc. (RPS) has begun documenting potential strategies for expanding the scale of effective programs (i.e., disseminating programs to multiple sites). It finds that most programs spread, not because of deliberate public policy and effective programming, but as a result of a private entrepreneurial effort, the charisma of the program designer, or the reputation of its organizational home (Replication and Program Strategies, Inc., 1994). RPS argues that replication involves two steps: (1) developing credible knowledge about the effectiveness of programs and their potential for broader adoption, and (2) based on that knowledge, reproducing programs that have been found to work (Furano et al., 1995).

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) has also taken a lead in the area of technology transfer and replication. OJJDP's funding of the Blueprints for Violence Prevention initiative is a major effort to disseminate information on effective programs and provide funding for training and technical assistance to help these programs get established in communities. It is also an attempt to systematically gather information on the challenges that arise in adopting new programs, implementing them, and in taking these programs to scale in a widespread dissemination effort. The Blueprints programs were adopted and implemented in different settings with widely varying problems and process outcomes. The lessons learned in this project can be applied by implementing agencies, designers of programs, and funders.

Recommendations for Implementing Agencies and Organizations

Choose a Program After Careful Research

Assess Need for Prevention Program

Success involves more than simply selecting effective programs and importing them into a school or agency. Decisions about adopting a program should be made with careful thought about its necessity. This entails assessing the risk and protective factors in the community or school that

need addressing and determining the population most in need of services. Risk and protective factors vary from community to community, and thus prevention needs also vary. Research has shown that the motivations for adopting a program often dictate its success or failure (Ellickson and Petersilia, 1983; Petersilia, 1990). Interventions that are adopted based on an internal need, rather than as an opportunistic effort to obtain outside funding, are more likely to succeed (Gendreau, Goggin, and Smith, 1999; Petersilia, 1990). If programs are adopted where similar programs are already being implemented in a school or community, this can lead to incomplete program implementation or program failure as similar programs become intermeshed. At the very least, students may become easily bored with redundant information. Thus, the needs assessment should include an overview of programs already being implemented in the area. Rather than having several redundant programs, a school or community should consider a comprehensive package of programming that is appropriate for each developmental stage and that can meet local needs.

Learn About Empirically Documented Programs

Once a site has a good idea of the degree and type of risk that exists in its area, it is time to identify programs that match the local needs. All too often, program decisions are made without the benefit of good information on best practices and model programs. Many programs are implemented despite the lack of empirical support for their effectiveness because practitioners do not always know where to turn for information and, at times, the abundance of information is difficult to sort through. In the past, prevention literature was not always readily available and was often too difficult to read. However, a tremendous amount of literature on prevention science has been collected and is being made available to the practitioner community through agencies and other avenues, such as the Blueprints initiative, that help to bridge the gap with the scientific community. The information search can begin with the lists of effective programs identified by various federal and nonprofit agencies. The Blueprints Web site (www.colorado.edu/cspv/blueprints) has documented these various lists, the types of programs, and the selection criteria. Also, attendance at workshops and conferences that focus on prevention can be extremely helpful. Conducting this type of exhaustive information search will result in better program adoption decisions and ultimately higher quality implementation (Gottfredson and Gottfredson, 2002).

Choose a Program That Fits the Need and the Target Population

After careful planning and research, the time comes to choose a program that matches the needs of the community and that is consistent with the stated goals or mission of the school, agency, or community. Carefully matching a program to community or agency needs will help ensure that the program is more readily accepted by other key players. Attention must also be given to matching a program to the targeted population. Many research-based programs are being implemented for populations for whom they were never intended, and for whom research has not proven their effectiveness. For instance, a universal drug prevention program, such as the Life Skills Training Program, should be implemented with whole classrooms and not with populations of drug-addicted youth, for whom the program has not been tested. The prevention elements of this program may not be effective with youth involved with drugs. Family-based programs, such as Multisystemic Therapy, have been proven effective with chronic and violent juvenile offenders. To use this program with youth at risk or having minor behavioral problems may be effective (this is not known since it has not been tested with this population), but it will likely not be cost beneficial. One major goal of MST is reduction in out-of-home placement at a cost savings. When programs are not well matched to the local needs and the population needing services, a risk of program failure exists as implementers may perceive the costs (e.g., time and resources) as greater than the benefits. Worse yet, the program may not have the intended results when delivered to a population for whom it has not been tested.

Enhance Readiness of Site

Blueprints simultaneously assessed and enhanced readiness through a comprehensive selection process that included an application and a subsequent feasibility visit to the site. The selection process focused on need, ability to garner the necessary human and financial resources, and motivation and commitment by key leaders. Most agencies that adopt a program will not have the benefit of an outside organization to help with front-end assessment and planning. However, several things can be done by a school or agency to enhance readiness to support a new program once the decision to implement a program has been made.

Build an Environment That Is Supportive of the New Program

The adoption of a model program does not necessarily ensure that a program will be implemented successfully. The environment in which the program is imported must be supportive of the innovation for the implementation to proceed smoothly. Although several tangible factors (such as financial and human resources) need to be in place to support a new program, the key to creating a supportive environment is information. Keeping all relevant staff informed about the program and maintaining a regular flow of information among all key participants throughout the process are integral to reducing apprehension and fears about the innovation. The following represent some steps that can be taken to build a supportive environment:

- Provide detailed information about the program before implementation to all key participants to build motivation and support.

- Arrange meetings with staff to discuss the program and how it might be integrated into the organization; listen to staff and try to alleviate fears around change.

- Arrange a site visit for program representatives to deliver a presentation on the program; invite all agency staff and relevant community members.

- Confront competing philosophies (i.e., philosophic arguments against program elements or rationales) early in the process. A presentation of the theoretical rationale and research findings that demonstrate the program's effectiveness is often sufficient to alleviate these fears.

Plan for Implementation

Create an implementation plan that details the logistics of program operation (e.g., who will implement, where, when, how long, how will clients be recruited, when is the best time to schedule a training so that all staff can attend). Remember that the implementing staff are the ones who will be most aware of conflicts; gather their input so that obstacles to the plan might be resolved before implementation. Don't wait until implementation begins to work out these important details.

Ensure That Money, Materials, and Personnel Are Adequate

Once a program is chosen that matches the needs of the community, then the time to seek funding and other resources has come. All too often, a program is chosen on the basis of available funding. Although this strategy may work for some communities, agencies, or schools, the commitment to the program is usually not as great as for one that is chosen after an exhaustive information search to find a program that fits the needs of the community. Learn about hidden program costs (such as evaluation instruments, program accessories, ongoing technical assistance), and garner all necessary resources and materials. If the program has a curriculum or manual, it should be purchased for all implementing staff to assure that their job can be performed as easily as possible. Ensure that the program is fully staffed to avoid burnout and loss of motivation. All implementing staff should be hired and in place before training to avoid additional training costs.

Understand the Importance of Implementation Fidelity

Ensure that administrators and implementers understand why fidelity is important. Provide indoctrination in the theoretical underpinnings of the program and ensure that all staff understand the core elements of the program that must be maintained to achieve the same results as those in research trials. These elements are best accomplished through training sessions provided by the program designers.

Improve the Quality of Implementation

Build Organizational Capacity Through Administrative Support

Develop administrative support. Administrative support is crucial to all implementation efforts because decisionmaking authority exists at this level. Programs are most successful when administrators, or top leaders, show support and encourage cooperation and coordination (Dunworth et al., 1999; Gager and Elias, 1997; Petersilia, 1990). Effective leaders have the power to instigate changes in the organization, allocate money and resources, and communicate a vision for the agency (and how the new program fits into that vision). In school-based programs, the principal should assume this role.

Demonstrate active support for the program. Merely stating support for the program is not enough. Leaders must demonstrate active support of the program (e.g., attendance at training, meeting periodically with implementing staff, listening to and making efforts to resolve problems, allocating necessary resources, changing policies and work routines that facilitate the program, and participating directly in the program).

Strive for internal stability. The organization should strive for internal stability (i.e., if staff turnover is high, the organization should examine the causes and make changes to increase staff stability).

Develop interagency linkages, as necessary. Although many programs can function in a school or agency without other linkages, programs in general are more successful and are better able to garner resources when they have the support of the surrounding community. Some programs need the support and assistance of other organizations that may refer clients or have some jurisdiction over clients after referral. Regular meetings attended by relevant staff from these organizations can help everyone remain informed of client progress and keep programs running smoothly.

Begin program efforts incrementally. Start the program in one or two schools, or in one division of an organization, and expand the program as success and capacity to conduct the program increase. Initiatives that start too large may end in failure because of the difficulty in coordinating large-scale efforts and in building support and motivation among numerous staff. As knowledge, skills, motivation, and comfort with the new model increase, expansion can begin.

Build Staff Support

Include staff in planning and decisionmaking. Building staff motivation and support is a continuous process, beginning during the planning stages and continuing through implementation. Staff should be included in decisions about the program, and information must constantly flow between the administrators and the implementing staff. Implementing staff were seldom involved in the planning for the Blueprints initiative; however, buy-in and motivation were garnered at feasibility visits and training sessions.

Hire staff with the appropriate credentials and requisite skills. Failure to hire capable staff may result in staff that are lacking in skills necessary for comprehending subsequent training sessions. This can slow the progress of training as remedial work must be done with some staff,

while others may become bored with this background information. Hiring staff with less than the necessary skills will often result in less motivation for the program, resistance, and, possibly, staff turnover.

Build skills through training in the new program. An ongoing system of training and technical assistance helps to build confidence while imparting new skills.

Provide the resources, materials, and financial compensation necessary to conduct the program. Examples include therapists who may need cell phones if the new program requires home visits; new flextime policies that may need to be instituted if therapists/nurses visit client homes in the evenings or at nights; higher pay scales that may need to be provided to staff who are on-call 24–7; incentives that may be necessary to entice families to attend group sessions.

Provide the time necessary to accomplish all aspects of the job. Lack of time is one of the biggest barriers to implementation success. The time required to learn the new program and to incorporate it into the daily routine must be considered. Adding a new program or duties on top of regular duties will seldom work. One of the worst mistakes made by agencies is the assignment of staff to a new program before releasing them from their old duties. Learning a new program requires time and dedication. This type of overload may result in dissatisfaction, low morale, and resistance to the new program.

Coordinating a new project also requires a great deal of effort and a tremendous investment of time. Implementation will usually suffer if a dedicated half- or full-time person is not assigned to this role. The Blueprints experience has demonstrated that half-time is usually not adequate to accomplish all the details of a new project and that additional time is required, especially in the first year. Volunteers can be a tremendous asset to any program; however, few volunteers will have the enormous amount of time required to coordinate a new initiative or program. Coordinating a program almost always requires more time than the volunteer or the host organization anticipates, so accomplishing all the necessary tasks becomes difficult. The best solution is to assign coordinating roles to agency staff rather than voluteers. Learn about the time commitments that are necessary and then plan for them.

Ensure That Site Has Program Champion(s)

Every program must have a "champion" who is responsible for directing or coordinating the program. This person keeps the program moving forward and motivates other staff. The program champion may come from the administrative ranks of the agency, but is more commonly directly involved in program implementation as a coordinator, project director, team leader, or nurse supervisor. The champion must have a voice in the organization to garner the necessary resources and help establish needed policy or work routine changes and must have good rapport and communication with all staff.

Develop a coordinating committee, if possible. Having several people involved in planning program details can be a great asset. Many programs fail because the program champion left the organization. Developing a committee builds multiple champions and decreases the chances of program failure when staff leave.

Provide Training and Technical Assistance

Training and technical assistance provide staff with the necessary skills, confidence, and motivation to implement a new program. A good package of training and TA can help an agency overcome a multitude of problems, including staff turnover, passive administrative support, and low fidelity. TA providers generate motivation and support for the program. They also enhance the quality of implementation by helping staff understand the basic theoretical underpinnings of the model they are implementing. When problems arise, TA providers can recommend solutions based on their years of experience with the program. An ongoing and proactive system of TA keeps programs moving forward and successfully accomplishing goals. The following are some specific issues related to training that should be noted:

- Inform staff about a new program prior to training.
- Hire all staff prior to training.
- For a school-based program, plan in advance for substitutes or incentive pay so that all teachers can attend.

- Have protocols detailing who should attend training and appropriate behavior during training (e.g., must be present for all training days, arrive on time, have someone cover duties during training days so no work disturbances occur, turn off beepers and cell phones).

- Start implementing immediately after training, while information is fresh and motivation high.

- Build ongoing training costs into the budget so that new staff may be trained.

Recommendations for Designers

Develop Materials for Program

Manuals, curriculums, and other materials—such as handouts, structured activities, and implementation standards—provide a framework that makes implementation easier and keeps it on track with fewer deviations from the intended content. Materials should be relevant, attractive, and easy to use.

Monitoring and other survey instruments should be developed and available to implementing sites to enable internal monitoring of the program, provide feedback, and ensure accountability to funders.

Develop Internal Capacity To Deliver Program

Most program designers are researchers and thus not well equipped to deliver their programs on a wide-scale basis. Yet, research-based programs are now appearing on various lists of effective programs, accelerating demand for them by the public. Program developers must meet the challenge of dissemination. Various methods of dissemination are possible, and program designers must decide on the method that makes sense to them. If a designer chooses to maintain control over the program, then she or he must set up a dissemination branch, separate from research, with the capacity to deliver the program. Full-time staff must be assigned to this endeavor; it cannot be done efficiently on top of research or other full-time duties.

Capacity-building grants are available through the National Institutes of Health, Small Business Innovation Research (SBIR) program. SBIR is a set-aside program designed to support innovative research and dissemination conducted by small businesses.

Develop Proactive Training and Technical Assistance

- Develop training and TA that can be delivered to sites efficiently and economically. Don't wait for sites to contact you with problems because this often doesn't happen even though they may be struggling with implementation issues. Be proactive! TA should include regular telephone consultation with the site and periodic site visits to provide additional training or assistance with problems.

- Create a system that enables sites across the nation to train new staff (i.e., periodic regional or national training sessions).

- Facilitate site independence. Few sites have the resources to pay for training and TA indefinitely. The assistance should, therefore, encourage site independence within a reasonable time period. This can be done by providing additional training to site coordinators that will enable them to sustain the program by training new staff.

- Include information on program fidelity in the training. Provide information on all core elements that must be implemented to ensure fidelity. If information on fidelity is not provided at training, most implementing staff will not become aware of its importance.

Pilot Test Training and TA

Experience in delivering training and TA often illuminates problems, and some fine-tuning may need to occur. Initiate the new TA package at a few sites and make necessary adjustments before going to scale with the program.

Assess Site Readiness To Adopt Program

Sometimes program curriculums or manuals are purchased and implemented with little or no training and TA. This is very common among school-based programs that have commercially available curriculums. However, many programs are complex and require the assistance of program designers and their designated TA providers. (Blueprints recommends that even school programs that have detailed curriculums should be provided with training.) In these more complex cases, designers should make some assessment of the readiness of an agency or school to implement the program. Readiness assessment and enhancement can be facilitated by the following:

- Develop an application for the program that assesses the need, resources (financial and human), commitment, and implementation plan.

- Conduct a feasibility visit to provide information, validate the application, and help in initial planning.

- Create a contract between the TA providers and the applicant that details the major requirements of the program and clearly states each party's responsibilities in fulfilling them.

Some sites may not be ready to implement a new program. For instance, they may not have adequate funding to purchase all the necessary resources or to fully implement all the program components. The fact that adequate buy-in has not been achieved to successfully implement the program may become evident. Working with the site to enhance its readiness to implement the program, while delaying implementation, may be advantageous. Although some people at a new site will be anxious to move forward with implementation and confront problems as they arise, this approach may diminish existing buy-in, create apprehension, and result in a lower quality implementation, if not failure.

Recommendations for Funders

Support Research-Based Programs

Funders should support programs that have been evaluated and proven effective. Programs that have not established their effectiveness should be funded with an evaluation to determine their effect. Money is often wasted implementing programs that make no improvement and, even worse, may be harmful to youth.

Support Implementation Research

The causes of program failure are often associated with poor implementation. Much work needs to be done in this area to understand the reasons for low-quality implementation. At this point, Blueprints only has evidence that a program works if it is implemented with all core components and with the prescribed dosage achieved in research trials. Research must be conducted to determine which core components are necessary to achieve successful outcomes and which components may be more adaptable. Determining the dosage threshold required to obtain results is also important. These cannot be subjective judgements, but must be determined empirically. Studies should be conducted to identify the factors that influence fidelity of implementation. For example, studies could examine how differences in training and technical support, implementer characteristics, and organizational support systems affect implementation.

Support Capacity Building Among Program Designers

Many programs have proven their effectiveness through scientific trials and are ready to be implemented on a broader basis. However, many program designers do not have the capacity to deliver their programs. Support of small-scale replication, including funding designers to build a delivery system, can help program developers become established as they begin to hire full-time staff to deliver the program and field-test their training and TA. As demand grows, the designers should be able to sustain project staff through the training and TA fees charged to sites; thus funding these efforts will not need to continue indefinitely.

Require Accountability With Funding

Accountability should be required to ensure that programs are being implemented with fidelity. At a minimum, funders of small grants should require grantees to complete internal monitoring (process) forms that identify which core elements of the program are being delivered and in what dosage. Larger grants that support wide-scale replication should include money for outside consultants to monitor implementation. The money may be given to the site to hire an outside consultant or the funder might contract with an outside consultant directly. This type of accountability helps to ensure that the funded program is, in fact, the program that is delivered. Monitoring also helps to ensure higher quality implementation, which ultimately leads to stronger outcomes.

Conclusion

The Blueprints initiative identifies effective programs and provides funding for their replication. Selected sites were provided training and TA for 2 to 3 years to help establish the program and to build skills and confidence in implementing the program. A process evaluation was also conducted at each site to ensure accountability and fidelity to the model. Widely varying issues and problems arose throughout the implementation. One of the major goals was to learn what these problems revealed about the factors that led to successful versus unsuccessful implementations. The broad scope of this project, which included prevention to treatment programs for every developmental stage, illuminated many factors that could make or break a program. The qualitative data gathered by the Blueprints initiative strongly support the importance of the following factors:

- Planning for implementation.
- Buy-in from all key staff (including administrators, coordinators/project directors, and implementing staff).
- A strong and motivated program champion(s).
- Proactive and consistent training and technical assistance.

Sites that want to adopt a new program should consider these factors and make every effort to create a supportive environment that includes these characteristics. The reward will be higher quality implementation and, ultimately, stronger outcomes.

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Appendix A: Monitoring the Quality of Implementation (Process Evaluation Research Design)

Definition of Program Evaluation

Program evaluation is the systematic assessment of program results. It demonstrates how well a program is achieving its goals. The Bureau of Justice Assistance (1994:1) defines program evaluation as:

> a systematic assessment of the results or outcomes of program efforts to measure actual outcomes against the intended outcomes of the program; to discover achievement and results; to discover deviations from planned achievements; to judge the worth of the program; to identify unintended consequences; and to recommend expansion, contraction, elimination, or modification of the program.

Although evaluators employ differing definitions of terms, two types of program evaluation exist. Outcome (impact) evaluation confirms that specific programs and/or activities are effective. Process evaluation provides information to assist in developing and implementing similar programs (Bureau of Justice Assistance, 1994).

Outcome evaluations determine the effectiveness or outcomes of service programs. They are designed to measure whether the service delivered produced a measurable change in the desired direction (i.e., toward the defined objectives) in those exposed to the program. This evaluation is usually accomplished by comparing baseline data collected on individuals (or other types of recipients, such as organizations and schools) before the program with data collected at the end of the program, with efforts made to control for other factors that might influence the outcomes. For example, an outcome evaluation might assess whether a drug prevention program had a measurable change in the alcohol, marijuana, and tobacco use rates of youth who participated in the program compared with youth who did not participate in the program. The objectives measured may be specific risk or protective factors that were targeted by the program (e.g., changing family management practices) or behavior change targeted by the program (e.g., reduction in marijuana use).

Outcome evaluations attempt to prove that the changes were caused by the program. Many factors in the real world may account for the outcomes, necessitating a rigorous research design that is capable of establishing causal links. Various evaluation designs may be used to assess impact and establish causality. The most reliable technique is random assignment of participants to treatment and control groups. If randomization is not possible, a technique that incorporates a matching control group can be used to compare those who received the program with a matched group who did not receive the program. The best outcome evaluations include and are informed by process evaluations that give insight into the outcomes that are obtained. If a program is not implemented as intended, with the appropriate quantity and quality of services, then attitudinal or behavioral changes observed during an outcome evaluation may be more difficult to attribute to the intervention. A recent shift in the field of evaluation research broadens the focus from a heavy concentration on program outcomes to include issues of program implementation and development (Dehar, Casswell, and Duignan, 1993).

All of the Blueprints programs have previously conducted multiple outcome evaluations according to rigorous scientific standards and have shown a clear relationship between the program activities and reductions in the behavioral outcomes of violence, delinquency, and/or substance abuse, and outcome evaluations of these programs are continuing (typically funded by the federal government). Therefore, when going to scale, the need to evaluate all or even most implementation sites is minimal in the short term. Instead, determining via a process evaluation whether the program is operating according to design specifications and being implemented properly becomes imperative. Because program success is dependent on implementation of services as intended or mandated, service delivery accountability is crucial. If the program is being implemented as designed and with high quality, then assuming that the program is also having an impact on the outcomes previously assessed is reasonably safe.

Process evaluations (i.e., formative evaluation, summative evaluation, or implementation monitoring) assess the delivery of a program by describing and documenting how well the program is being implemented, or the integrity or fidelity of the implementation in comparison with the program's stated intent. They primarily describe what services were provided to whom, the intensity and duration of services provided (dosage), and what problems were experienced. This involves documenting whether the program is delivering the program service or intervention as it was designed (adherence). In other words, is the program delivered by appropriately trained staff using the correct protocols in totality and in the intended order and with the appropriate techniques and materials, for the required number of hours, sessions, or activities, and in the

locations or contexts prescribed? For example, if a program is designed to be taught in the classroom three times a week, a process evaluation would document whether the required number of lessons were actually taught, as fewer sessions might dilute the effectiveness of the program. Generally an assessment of the quality of the implementation as well as its content is made. For example, the process evaluation might document whether all of the major content areas of the lessons were taught, or if all the core components of an intervention were implemented. It also involves documenting that the persons receiving the program or intervention are those targeted in the program design to receive this service or treatment.

In the process of obtaining information regarding the quality and quantity of implementation, keeping records of the problems or difficulties encountered in the process of implementing the program and the ways these problems were addressed is important. Problems that have been encountered in earlier implementations and the solutions achieved can provide important and timesaving information to sites thinking about replication. The lessons learned are useful to others interested in replicating the program, allowing them to anticipate potential problems and adopt successful strategies for dealing with them. The careful documentation of replication failures, successes, problems, and solutions provides others thinking of replicating a specific program with information that may help them in their decision to adopt a program. Unfortunately, the lessons learned during a program implementation are seldom recorded, and mistakes are often repeated in subsequent replications.

Purposes of Implementation Monitoring

Rossi, Freeman, and Lipsey (1999) describe three major purposes of implementation monitoring:

- To provide a process evaluation (stand-alone or to inform outcome evaluation).
- To provide feedback for managerial purposes.
- To demonstrate accountability to sponsors and decisionmakers.

Each purpose is briefly discussed below.

Process Evaluation (Stand-alone or To Inform Outcome Evaluation)

The primary purpose of process evaluation is to improve the understanding of how a program achieves its results. It is used primarily to interpret program outcomes and inform others wishing to learn from the experiences of the program (Dehar, Caswell, and Duignan, 1993). The evaluation can stand alone as a management tool to answer questions about the effectiveness of program operations, service delivery, etc., or it may be conducted in conjunction with an outcome evaluation to determine the quantity and quality of services to use, with findings on the impact of those services. Although some variability in program delivery may reflect local adaptations to a program, which in some cases may be desirable, other variability may reflect differences between the intended program and the program that is actually delivered. The more variability expected in the implementation of a program, the greater the need for a process evaluation. If program implementation is not monitored and assessed, an outcome evaluation may be assessing elements that are vastly different from those developed by the program designer, and may result in erroneous conclusions about the effectiveness of the program. For example, the impact of a program may be diminished by the failure to implement correctly. This information is important to ascertain, especially if the outcome evaluation shows no impact on behaviors and attitudes, for this failure to achieve results may not be the result of a poorly conceptualized program, but rather a poor quality of implementation. Left unanswered is whether the program would have worked if it had been implemented correctly. Although researchers generally agree that process evaluation should be conducted hand-in-hand with outcome evaluation, this is seldom done.

Feedback for Managerial Purposes

Process evaluation is best viewed as a feedback mechanism that can guide future planning and implementation, resulting in programs that are increasingly more effective. Since program failures are often a result of faulty implementation (Fagan, 1990; Gottfredson, Gottfredson, and Skroban, 1998), program monitoring can be used as a management tool to provide feedback to administrators, designers, and practitioners for assessing their own progress and making decisions about day-to-day activities. Data are often collected in a systematic manner and incorporated into a management information system that is periodically summarized. Data may include information on amount of services provided, number and sociodemographic characteristics of clients receiving

services, diagnoses, and staff providing services. Importantly, the evaluation also helps to identify areas where goals are being met or exceeded, or where the program is failing to meet goals. Some understanding about why goals are not being achieved should lead to modifications in the program to improve services and help achieve these goals. This information enables administrators to fine-tune a program.

Accountability to Sponsors and Decisionmakers

A strong demand exists today for accountability. Program sponsors—federal agencies, states, private foundations, politicians, and other funders—demand to know how money is being spent, whether a high-quality program is being delivered, and whether the outlay of money is producing sufficient outcomes. Evaluation provides one source of input that can be used by policymakers in the decision to commit financial and other resources. Program monitoring may provide the basis, either alone or in conjunction with an outcome evaluation, for judging program effectiveness. It provides program sponsors with information on accountability (e.g., what resources are being provided, who is being provided the resources, and how the resources are being provided). Performance measurement provides information both on program processes and program outcomes (the results of services). Although the measurement of program outcomes falls short of a formal outcome evaluation, the patterns and trends of indicators that would be examined more formally in an outcome evaluation are measured in some quantitative fashion (e.g., the number of youth who were diverted from out-of-home placements, improved health for participants served, increased awareness of the harm from cigarette smoking). These indicators provide evidence of program performance and can be used to demonstrate program accountability to managers, politicians, and sponsors. Because major decisions about funding are sometimes made on the basis of evaluation results, assessment is often feared by community practitioners. Elias and colleagues (2000:257) state, "One should not fear unwanted results. One should fear unwanted results that one does not know about."

Data for process evaluation are primarily gathered through service records (e.g., forms and logs), focus groups, direct observation by the evaluator, and information gathered from program staff and participants through written questionnaires or telephone or in-person interviews. Process evaluation may be conducted at one point in time or may be conducted over an extended period of time by an outside evaluator, or it may be set up as a management tool and monitored by a person employed in the implementing agency.

Blueprints Process Evaluation

For the Blueprints project, a process evaluation was conducted at each of the replication sites. This evaluation was designed to answer four questions:

- **Program coverage.** Is the program reaching the intended target population (i.e., the appropriate population, the correct number of recipients, and the right characteristics—age group, gender, socioeconomic status, etc.)?

- **Fidelity and dosage.** Is the program being implemented as designed (i.e., is the program delivering the services it was intended to deliver in the way it was designed to deliver them, in terms of number and quality of program components)?

- **Barriers.** What are the obstacles and barriers that prevent a complete implementation?

- **Satisfaction.** Is the program perceived by the implementers as worthwhile?

Little is known about implementation problems, even though many programs fail. Typically, program failure is the result of unsuccessfully implementing the program as designed (Fagan, 1990; Gottfredson, Gottfredson, and Skroban, 1998). One objective of the Blueprints initiative is to build the body of knowledge about implementation by accumulating data on Blueprints replications: ingredients for successful implementation, problems encountered, and attempted solutions—which worked or didn't work and why. The Blueprints evaluation has endeavored to describe the implementation of each program and to record lessons learned within and across prevention programs so that future implementers can benefit from earlier successes and failures. The Blueprints initiative has also collected useful data for screening potential replications and identifying elements needed to ensure a high probability of success, such as organizational capacity, funding stability, commitment, and resources. Because the quality of implementation is highly related to the type and degree of technical assistance provided (Gottfredson, Gottfredson, and Czeh, 2000), the effectiveness of the technical assistance delivered was also assessed in this project. Monitoring all these processes has enabled Blueprints to gain valuable information about what works best.

Measuring Program Fidelity

Although the concept of program fidelity is not new, the methods to measure fidelity are only recently emerging. Program components must be fully described in order to measure fidelity. The core components of a program are basically the practical applications of the theoretical elements of the program that most likely account for its positive outcomes. Components are the strategies, activities, behaviors, media products, and technologies needed to deliver the program, along with specifications of the intended recipients and delivery situations (Wholey, Hatry, and Newcomer, 1995). Wholey and colleagues (1995) identify the following criteria for specifying measurable program components:

- Activities identified as behaviors that can be observed rather than as goals or objectives.
- Each component is distinguishable from other components so that each one can be measured separately.
- Each component is linked to its underlying theoretical rationale.
- All activities and materials intended for use in the intervention have been included.
- Aspects of the intervention that are intended to be adapted to the setting, as well as those that are intended to be delivered as designed have been identified.

The core components of each of the Blueprints programs are clearly specified in the Blueprints books, which were created by Blueprints staff and each program designer. In year 1 of this grant, Blueprints staff worked with each of the program developers to define a set of performance measures and specific criteria for determining the quality and level of implementation being achieved at each site. Because Blueprints compares implementation across projects, some common measuring tools were developed in addition to tools that were specific to a program.

A core instrument with eight milestones (funding acquired; resources acquired; key contacts and organizational linkages made; staff hired; staff trained; target population identified, recruited, and being served; program components implemented; client activities or services provided at correct dosage) common to all Blueprints programs was used as an adjunct to Blueprints-specific forms.

This instrument (see Appendix C for an example of the core form for Multisystemic Therapy), which also lists all core program components, allowed comparison of the quality of the implementation across all sites and within Blueprints-specific sites. The core form was completed by both the TA providers and by Blueprints representatives after a site visit. The form gave insight on implementation progress in achieving all goals, including whether or not all of the core components of the program were being implemented. Each core component of the program was assessed as to whether it had been achieved or not achieved (primarily through interviews and surveys with staff). The level of treatment integrity at each site was obtained by summing the number of components correctly and fully implemented (attainment of 100 percent of the process objectives for a particular activity) and dividing this number by the total number of components to yield percent integrity (Gresham et al., 1993). This summary score of overall progress by each site provided a succinct, concise measurement; however, it revealed little about the problems encountered in achieving progress goals. Therefore, qualitative data on barriers and obstacles to achieving each of the eight milestones were also collected.

Additional forms that were specific to each program were created to monitor implementation and to document the number and demographic characteristics of clients receiving services, completion of program elements, and staff satisfaction with the program and satisfaction with the technical assistance provided. These forms were completed by the Blueprints representatives at each process evaluation site visit. An exit interview was conducted with the coordinator of the program at each site to gain the site's perspective on implementation success and future goals. At the end of the grant period, a survey questionnaire was completed by each site coordinator or director stating (on a 5-point scale) how much of an asset or barrier various implementation factors (e.g., program characteristics, agency and staff characteristics, training and TA, community support) were. Followup interviews were also conducted at 6 months and 1 year to determine the sustainability of the program after Blueprints funding ceased.

Data Collection Methods

The Blueprints process evaluation was conducted over a 2-year period for most Blueprints programs. The evaluation of Life Skills Training replication sites, still ongoing, takes place over a 3-year period. Monitoring the integrity of the implementation at each site is accomplished through four distinct channels that use several data collection methods: reports from Blueprints staff gathered in site visits and telephone interviews; reports from the TA providers gathered in training

and technical assistance visits; surveys of staff and program participants gathered onsite and via telephone and mail; and program documents and records.

Site Visits

Blueprints staff collect process evaluation data from the replication sites three times per year (two data collections are onsite and one is conducted by phone). Program staff are asked to respond to a survey form during each data collection. This core form indicates implementation progress, adherence to core program components, problems that may have arisen and how they were handled, and quality of and satisfaction with services provided by the TA provider. Blueprints representatives gather other information through the program-specific forms, mentioned above. Information gathered at a site through the survey forms and observations is summarized in written reports after each visit.

The process evaluation for Life Skills Training involved different procedures. Because of the shorter timespan of the program each year (15 weekly sessions in year 1, 10 in year 2, and 5 in year 3), only 1 site visit was made each year. Random classroom observations of each teacher were also made to monitor the delivery of core program objectives in each lesson. Four observations of all level 1 teachers, three of level 2 teachers, and two of level 3 teachers were made each year.

Site visits enable a rich collection of data from multiple informants, but many qualities of a program cannot be described by completing survey forms and gathering official site documents or records (e.g., the quality of relationships among participants in a program, among program staff, and among staff and participants; the physical environment of the treatment setting; obstacles encountered during the implementation). The information collected in site visits should be based on an understanding of the theoretical underpinnings and the goals and objectives of each program. For example, the information gathered in a site visit for Life Skills Training might include the extent to which teachers are following the program curriculum and using interactive teaching methods as opposed to didactic methods. Since information collected on one day may not be representative of the program activities, asking questions about problems or deviations from the program design is important. Unusual activities that are uncovered during a site visit may be atypical or they may represent deviations from the program design; determining which is the case is important. Usually several onsite observations will shed light on the matter. Multiple observations will enable the observer to gather a more accurate and representative picture of

day-to-day program activities. Observations may elucidate implementation problems that can be corrected. Multiple observations enable the observer to determine whether the program has implemented the necessary modifications to bring the program in line with the original design.

TA Provider Reports

TA providers must also complete a report after each technical assistance visit documenting the services provided, problems encountered, and how problems were addressed (this is the same survey, core form, that the Blueprints field representatives complete). This report provides some assessment, from a TA provider's point of view, of whether or not the program site is on track for a quality implementation. Program sites that lag behind may require extra effort and resources to elevate them to a predetermined standard. Ensuring that program sites make steady progress toward their implementation goals is important. Each Blueprints program defines standardized goals that should be achieved by a certain time. The progress that has been made in achieving these goals is documented in each site visit report.

Interviews and Staff Surveys

Obtaining data from the program participants and staff, through a combination of one-on-one interviews and paper and pencil surveys, is another method used to document program implementation. Interviews with program directors and coordinators, therapists, teachers, or other critical program staff provide useful information on the barriers encountered during implementation and how problems were addressed. This information will be useful to other programs as they begin operations. Interviews and surveys with staff and program participants provide an opportunity to gather data on perceptions of the program, satisfaction with and commitment to the program, and problems encountered. Interviews with multiple staff members provide a broader perspective on implementation. Again, this information will be useful to other sites in their own replication efforts.

Program Documents and Records

A great deal of archival data that program sites have already collected (such as program attendance sheets, listings of activities, phone logs, program budgets, and records from in-house management information systems) can be used for a process evaluation. When practical and not

overly burdensome to the replication sites, such documents have been used by Blueprints. For example, the Nurse-Family Partnership (formerly Home Visitation by Nurses) program has an indepth management information system that collected most of the quantitative data necessary for the Blueprints process evaluation, such as number of clients, number of visits to clients (completed and uncompleted), and services rendered to clients. Blueprints supplemented this data with the core form documenting progress and adherence to core program components. The Multisystemic Therapist Adherence Checklist was used to assess therapist adherence to the treatment principles of MST; this form can be completed by adolescents, parents, and/or therapists. This type of archival data is generally easy to access and relatively inexpensive to obtain. Care should always be taken, however, in approaching the sites for this information to ensure that the information can be obtained in a nondisruptive manner and without threats to confidentiality.

The data obtained from these methods are summarized in a report every 6 months that is shared with the program designers, TA providers, and the sites. In the Life Skills Training initiative, the data are shared at the end of each school year. This enables the sites to use the information to determine whether goals have been achieved and to make midstream changes in program implementation, if necessary. Although TA providers are usually already aware of most of the problems at a site, both through their own contacts with the site and through immediate feedback to them when problems are identified at the site visits, this systematic collection and collation of the data enable them to see the progress of one site compared to others, which may help identify systematic delays or problems in implementation. Because the survey forms and reports to the sites emphasize implementing all core components and highlight areas where the site may be failing to do so, the process evaluation feedback is a strong reminder to the replication sites that implementation fidelity is extremely important, and it offers encouragement to everyone to stay on track to achieve successful outcomes. As mentioned earlier, the number one cause of program failure is poor implementation. This has been empirically demonstrated in several scientific studies.

In sum, these site visits and other data collection efforts are conducted to monitor the program implementation, answer questions, provide support and encouragement for implementing with integrity, and provide feedback to the site on its efforts. The evaluation was designed to enhance fidelity and program dosage and reduce variation in program implementation (McGraw et al., 1994).

Appendix B: Site Visit Questionnaire

Site Visit Questionnaire for Multisystemic Therapy

This questionnaire should be filled out after each technical assistance site visit to document the ongoing developmental process at the replication site. Extra sheets may be used to answer questions in greater detail.

TA Provider: _____ Date: _____
Replication Site: _____ Site Visit #: _____
Number of people you met with: _____

PROGRESS		**OUTCOME**			
Not Yet Started	In Progress	Achieved	Exceptional Achievement	Not Achieved	NA
0	1	2	3	4	9

Circle one

1. Funding acquired 0 1 2 3 4 9

Progress to date: _____
_____
_____

How were problems addressed (what worked and what didn't)? _____
_____
_____
_____
_____

2. Resources (other than funding) for program implementation acquired 0 1 2 3 4 9

A. Client referral base 0 1 2 3 4 9
B. Cellular phones/pagers 0 1 2 3 4 9
C. Computer and Internet access (if applicable) 0 1 2 3 4 9
D. Speaker phone 0 1 2 3 4 9

Progress to date: _____
_____
_____

How were problems addressed (what worked and what didn't)? _____
_____
_____
_____

3. Key contacts made/community and organizational linkages established 0 1 2 3 4 9

A. Juvenile Justice 0 1 2 3 4 9
B. Social Welfare 0 1 2 3 4 9
C. Mental Health 0 1 2 3 4 9
D. School 0 1 2 3 4 9
E. Family Court (if applicable) 0 1 2 3 4 9

Progress to date: _____

How were problems addressed (what worked and what didn't)? _____

4. Staff hired (with appropriate credentials) 0 1 2 3 4 9

A. Full-time MST Therapist (M.A. or M.S.W.) 0 1 2 3 4 9
B. MST Clinical Supervisor (M.S.W. acceptable; Ph.D. preferred) 0 1 2 3 4 9

Progress to date: _____

How were problems addressed (what worked and what didn't)? _____

5. Staff trained (considered done when 5A completed) 0 1 2 3 4 9

A. Initial 0 1 2 3 4 9
B. 2nd quarter year 1 booster session 0 1 2 3 4 9
C. 3rd quarter year 1 0 1 2 3 4 9
D. 4th quarter year 1 0 1 2 3 4 9
E. 1st quarter year 2 0 1 2 3 4 9
F. 2nd quarter year 2 0 1 2 3 4 9
G. 3rd quarter year 2 0 1 2 3 4 9
H. 4th quarter year 2 0 1 2 3 4 9
I. All Supervision completed (considered done when 5B–H completed) 0 1 2 3 4 9

Progress to date: _____

How were problems addressed (what worked and what didn't)? _____

_____

_____

_____

_____

6. Target population identified, recruited, and being served 0 1 2 3 4 9

A. Selection criteria established 0 1 2 3 4 9
B. Recruitment strategies for referral source established 0 1 2 3 4 9
C. Recruitment strategies implemented 0 1 2 3 4 9
D. Target population served 0 1 2 3 4 9
E. Strategy for expansion, if desired 0 1 2 3 4 9

Progress to date: _____

_____

_____

How were problems addressed (what worked and what didn't)? _____

_____

_____

_____

_____

7. Program components implemented as planned 0 1 2 3 4 9

A. Core program components 0 1 2 3 4 9
a. Treatment teams do not exceed 4 therapists per clinical supervisor 0 1 2 3 4 9
b. Delivery of service in community setting (home, school, etc.) 0 1 2 3 4 9
c. Low caseloads (4 to 6 families per therapist) 0 1 2 3 4 9
d. Time limited duration of treatment (3 to 5 months) 0 1 2 3 4 9
e. Provision of comprehensive services 0 1 2 3 4 9
f. Nine principles of treatment adhered to by all therapists 0 1 2 3 4 9
g. 24 hours a day and 7 days a week availability of therapists 0 1 2 3 4 9
h. Policies allowing flex/comp time 0 1 2 3 4 9

B. Critical nontechnical elements implemented 0 1 2 3 4 9
a. MST adherence measure implemented properly 0 1 2 3 4 9
b. Treatment team committed to MST model 0 1 2 3 4 9
c. Administration supportive of MST model 0 1 2 3 4 9
d. Weekly case paperwork maintained 0 1 2 3 4 9
e. Policies regarding the use of personal vehicles 0 1 2 3 4 9

Progress to date: _____

_____

_____

How were problems addressed (what worked and what didn't)? _____

_____

_____

_____

_____

8. Client activities or services provided, as designed 0 1 2 3 4 9

A. Sessions scheduled according to the needs of clients 0 1 2 3 4 9
B. Weekly phone consultations with MST expert 0 1 2 3 4 9
C. Weekly group clinical supervision 0 1 2 3 4 9

Progress to date: _____

_____

_____

How were problems addressed (what worked and what didn't)? _____

_____

_____

_____

_____

Total number of clients ____ Discharged successfully ____ Discharged unsuccessfully ____

9. Describe problems which remain unresolved at present?

_____

_____

_____

10. What changes to the original design of the program were made to make it work in this setting and why?

_____

_____

_____

_____

11. What strategies were adopted to make the program culturally competent in this setting (e.g., bilingual staff, staff training on cultural group values or gender-specific issues)?

_____

_____

_____

_____

12. What conclusions and recommendations can be made (include how the program can be improved)?

_____
_____
_____
_____

13. For CSPV Rep: Is information provided in this form consistent with the TA provider's last report? Please explain.

_____
_____
_____
_____

14. For TA provider: What was the reason for your visit (circle one)?

A. Feasibility visit
B. Training
C. Routine visit
D. Site requested a visit with you. Please explain.

_____
_____
_____

E. You felt a visit was necessary. Please explain.

_____
_____
_____

F. Other _____

15. Attachments to report:

A. MST adherence plots for each therapist at the time of booster training

Comments: