

MST TREATMENT MODEL

MULTISYSTEMIC THERAPY

AT A GLANCE

Program Overview:

Multisystemic Therapy (MST) is an intensive family- and community-based treatment that addresses the multiple determinants of serious antisocial behavior in juvenile offenders. The multisystemic approach views individuals as being nested within a complex network of interconnected systems that encompass individual, family, and extrafamilial (peer, school, neighborhood) factors. Intervention may be necessary in any one or a combination of these systems.

Program Targets:

MST targets chronic, violent, or substance abusing juvenile offenders at high risk of out-of-home placement and their families.

Program Content:

MST addresses the multiple factors known to be related to delinquency across the key settings, or systems, within which youth are embedded.. MST strives to promote behavior change in the youth's natural environment, using the strengths of each system (e.g., family, peers, school, neighborhood, indigenous support network) to facilitate change.

The major goal of MST is to empower parents with the skills and resources needed to independently address the difficulties that arise in raising teenagers and to empower youth to cope with family, peer, school, and neighborhood problems. Within a context of support and skill building, the therapist places developmentally appropriate demands on the adolescent and family for responsible behavior. Intervention strategies are integrated into a social ecological context and include strategic family therapy, structural family therapy, behavioral parent training, and cognitive behavior therapies.

MST is provided using a home-based model of services delivery. This model helps to overcome barriers to service access, increases family retention in treatment, allows for the provision of intensive services (i.e., therapists have low caseloads), and enhances the maintenance of treatment gains. The usual duration of MST treatment is approximately 4 months.

Program Outcomes:

Evaluations of MST have demonstrated:

- reduced long-term rates of criminal offending in serious juvenile offenders,
- reduced rates of out-of-home placements for serious juvenile offenders,
- extensive improvements in family functioning,
- decreased mental health problems for serious juvenile offenders,

- favorable outcomes at cost savings in comparison with usual mental health and juvenile justice services.

EXECUTIVE SUMMARY

Background

Multisystemic Therapy (MST) was developed in the late 1970s to address several limitations of existing mental health services for serious juvenile offenders. These limitations include minimal effectiveness, low accountability of service providers for outcomes, and high cost.

Treatment efforts, in general, have failed to address the complexity of youth needs, being individually-oriented, narrowly focused, and delivered in settings that bear little relation to the problems being addressed (e.g., residential treatment centers, outpatient clinics). Given overwhelming empirical evidence that serious antisocial behavior is determined by the interplay of individual, family, peer, school, and neighborhood factors, it is not surprising that treatments of serious antisocial behavior have been largely ineffective. Restrictive out-of-home placements, such as residential treatment, psychiatric hospitalization, and incarceration, fail to address the known determinants of serious antisocial behavior and fail to alter the natural ecology to which the youth will eventually return. Furthermore, mental health and juvenile justice authorities have had virtually no accountability for outcome, a situation that does not enhance performance. The ineffectiveness of out-of-home placement, coupled with extremely high costs, have led many youth advocates to search for viable alternatives. MST is one treatment model that has a well-documented capacity to address the aforementioned difficulties in providing effective services for juvenile offenders.

Theoretical Rationale/Conceptual Framework

Consistent with social-ecological models of behavior and findings from causal modeling studies of delinquency and drug use, MST posits that youth antisocial behavior is multidetermined and linked with characteristics of the individual youth and his or her family, peer group, school, and community contexts. As such, MST interventions aim to attenuate risk factors by building youth and family strengths (protective factors) on a highly individualized and comprehensive basis. The provision of home-based services circumvents barriers to service access that often characterize families of serious juvenile offenders. An emphasis on parental empowerment to modify the natural social network of their children facilitates the maintenance and generalization of treatment gains.

Brief Description of Intervention

MST is a pragmatic and goal-oriented treatment that specifically targets those factors in each youth's social network that are contributing to his or her antisocial behavior. Thus, MST interventions typically aim to improve caregiver discipline practices, enhance family affective relations, decrease youth association with deviant peers, increase youth association with prosocial peers, improve youth school or vocational performance, engage youth in prosocial recreational outlets, and develop an indigenous support network of extended family, neighbors, and friends to help caregivers achieve and maintain such changes. Specific treatment techniques used to facilitate these gains are integrated from those therapies that have the most empirical support, including cognitive behavioral, behavioral, and the pragmatic family therapies.

MST services are delivered in the natural environment (e.g., home, school, community). The treatment

plan is designed in collaboration with family members and is, therefore, family driven rather than therapist driven. The ultimate goal of MST is to empower families to build an environment, through the mobilization of indigenous child, family, and community resources, that promotes health. The typical duration of home-based MST services is approximately 4 months, with multiple therapist-family contacts occurring each week.

Although MST is a family-based treatment model that has similarities with other family therapy approaches, several substantive differences are evident. First, MST places considerable attention on factors in the adolescent and family's social networks that are linked with antisocial behavior. Hence, for example, MST priorities include removing offenders from deviant peer groups, enhancing school or vocational performance, and developing an indigenous support network for the family to maintain therapeutic gains. Second, MST programs have an extremely strong commitment to removing barriers to service access (see e.g., the home-based model of service delivery). Third, MST services are more intensive than traditional family therapies (e.g., several hours of treatment per week vs. 50 minutes). Fourth, and most important, MST has well-documented long-term outcomes with adolescents presenting serious antisocial behavior and their families.

The strongest and most consistent support for the effectiveness of MST comes from controlled studies that focused on violent and chronic juvenile offenders. Importantly, results from these studies showed that MST outcomes were similar for youths across the adolescent age range (i.e., 12-17 years), for males and females, and for African-American vs. white youths and families.

Evidence of Program Effectiveness

The first controlled study of MST with juvenile offenders was published in 1986, and since then, three randomized clinical trials with violent and chronic juvenile offenders have been conducted. In these trials, MST has demonstrated long-term reductions in criminal activity, drug-related arrests, violent offenses, and incarceration. This success has led to several randomized trials and quasi-experimental studies aimed at extending the effectiveness of MST to other populations of youth presenting serious clinical problems and their families.

GOALS AND MEASURABLE OBJECTIVES

The primary goals of MST are to (a) reduce youth criminal activity, (b) reduce other types of antisocial behavior such as drug abuse, and (c) achieve these outcomes at a cost savings by decreasing rates of incarceration and out-of-home placements. MST aims to achieve these goals through a treatment that addresses risk factors in an individualized, comprehensive, and integrated fashion; and that empowers families to enhance protective factors.

TARGETED RISK AND PROTECTIVE FACTORS

The empirical literature strongly supports a social-ecological view (Bronfenbrenner, 1979) of antisocial behavior in children and adolescents. The central tenet of this view is that behavior is multidetermined through the reciprocal interplay of the child and his or her social ecology, including the family, peers, school, neighborhood, and other community settings. Consistent with this perspective, associations have been observed between various forms of antisocial behavior and key characteristics (i.e., risk and protective factors) of individual youths and the social systems in which they are embedded (i.e., family, peer, school, neighborhood). In general, these risk and protective factors are relatively constant, whether the examined antisocial behavior is conduct disorder, delinquency, or substance abuse. A generic list of identified risk and protective factors is provided in

Table 1.

In light of the multiple known determinants of antisocial behavior, at least twenty research groups have conducted sophisticated causal modeling studies in an attempt to describe the interrelations among these correlates. Findings from the fields of delinquency and substance abuse have been relatively clear and consistent. First, association with deviant peers is virtually always a powerful direct predictor of antisocial behavior. Second, family relations either predict antisocial behavior directly (contributing unique variance) or indirectly through predicting association with deviant peers. Third, school difficulties predict association with deviant peers. Fourth, neighborhood and community support characteristics add small portions of unique variance or have an indirect role in predicting antisocial behavior. Across studies and in spite of considerable variation in research methods and measurement, investigators have shown that youth antisocial behavior is linked directly or indirectly with key risk and protective factors of youth and of the systems in which they interact.

Table 1. Risk and Protective Factors

CONTEXT	RISK FACTORS	PROTECTIVE FACTORS
Individual	<ul style="list-style-type: none"> . low verbal skills . favorable attitudes toward antisocial behavior . psychiatric symptomatology . cognitive bias to attribute hostile intentions to others 	<ul style="list-style-type: none"> . intelligence . being firstborn . easy temperament . conventional attitudes . problem solving skills
Family	<ul style="list-style-type: none"> . lack of monitoring . ineffective discipline . low warmth . high conflict . parental difficulties, e.g., drug abuse, psychiatric conditions, criminality 	<ul style="list-style-type: none"> . attachment to parents . supportive family environment . marital harmony
Peer	<ul style="list-style-type: none"> . association with deviant peers . poor relationship skills . low association with prosocial peers 	<ul style="list-style-type: none"> . bonding with prosocial peers
School	<ul style="list-style-type: none"> . low achievement 	<ul style="list-style-type: none"> . commitment to schooling

	<ul style="list-style-type: none"> . dropout . low commitment to education . aspects of the schools, such as weak structure and chaotic environment 	
Neighborhood & Community	<ul style="list-style-type: none"> . high mobility . low community support (neighbors) . neighbors, church, etc. . high disorganization . criminal subculture 	<ul style="list-style-type: none"> . ongoing involvement in church activities strong indigenous support network

Implications of Risk Factors and Protective Factors for Treatment

The clinical implications of these findings seem relatively straightforward. If the primary goal of treatment is to optimize the probability of decreasing rates of antisocial behavior, then treatment approaches must have the flexibility to attenuate the multiple known determinants of antisocial behavior (i.e., risk factors), while enhancing protective factors. That is, effective treatment must have the capacity to intervene comprehensively, at individual, family, peer, school, and possibly even neighborhood levels.

With regard to MST in particular, interventions are designed to address those risk factors and protective factors that are closest to identified treatment goals. Thus, in any one case, MST will address an individualized subset of risk and protective factors. Because of the broad variety of potentially important risk and protective factors, however, MST must have the capacity to address a broad and comprehensive range of pertinent variables. Consequently, the identification of the key variables in a particular case is the major task of assessment in MST.

TARGETED POPULATION

MST has been implemented in four randomized clinical trials with over 300 serious, violent, or substance abusing juvenile offenders and their families. Reflecting the demographics of youth in the juvenile justice system, the majority of youths receiving MST have been males and members of single-parent households that were characterized by economic disadvantage (see Table 2).

Table 2. Participant Characteristics in MST Randomized Trials with Serious Juvenile Offenders

Study Features	Columbia, MO ^a	Simpsonville, SC ^b	Multisite, SC ^c	Charleston, SC ^d
Participant Characteristics:				
Mean Age (years)	14.8	15.2	15.2	15.7

Age Range (years)	12-17	12-17	10.4-17.6	12-17
% Male	67.5	77	82	79
% Caucasian	70	42	19	47
% African-American	30	56	81	50
% Single Parent Families	47	_f	50	50
Mean Number of Previous Arrests	4.2	3.5	3.1	2.9
% With at Least One Violent Arrest	19	54	40	-
% With Previous Incarceration for at Least 3 Weeks	63	71	59	-
Eligibility Criteria:				
Violent or Chronic Offender	No ^e	Yes	Yes	No
Imminent Risk of Out-of-Home Placement	No	Yes	Yes	No
Diagnosed Substance Abuse or Dependence	No	No	No	Yes
At Least One Parent Figure in Home	Yes	Yes	Yes	Yes

^aBorduin et al. (1995) ^dHenggeler et al. (1997)

^bHenggeler et al. (1992,1993) ^eReferrals had to have a least two arrests

^cHenggeler, Melton et al. (1997) ^f26% lived with neither biological parent

With the exception of one of these projects, African-American youths have outnumbered White offenders. In addition, controlled evaluations and dissemination projects using MST are currently underway in twelve states and Canada with other populations of youths presenting serious clinical problems (e.g., MST as an alternative to the emergency hospitalization of children presenting psychiatric emergencies; maltreating families). Each of these projects focuses on youth (and their families) who either have been approved for out-of-home placement or are at high risk for such

placement. Thus, the aims of the projects are to obtain favorable clinical outcomes at cost savings relative to usual services.

DEVELOPMENTAL AND CULTURAL APPROPRIATENESS

The cultural and/or developmental appropriateness of MST is supported in several ways. First and most important, findings from randomized trials of MST with violent and chronic juvenile offenders showed that the favorable effects of MST were not moderated by youth ethnicity (African-American vs. White) or age. Thus, MST has been equally effective with African-American families as with White families, and with younger adolescents as with older adolescents. These outcomes constitute empirical evidence of the cultural and developmental appropriateness of MST.

Second, therapists view family members as full collaborators in the treatment planning and delivery process, with treatment goals driven primarily by parents. Such collaboration decreases the likelihood that treatment goals are driven by biases of the dominant culture, and increases the probability that interventions are appropriate to the family's cultural values.

Third, MST emphasizes the development of extended family and informal support networks for the family. By definition, the building of indigenous family and informal support networks (in potential contrast with formal supports obtained from public agencies) reflects the culture of the youth and family.

Fourth, MST treatment teams usually reflect the ethnic make-up of the population that is being served. Multicultural team composition provides a framework in which culturally appropriate and inappropriate practices can be identified and discussed among like-minded colleagues whose overarching purpose is to facilitate the attainment of favorable clinical outcomes among program participants.

Fifth, through using the family preservation model of service delivery, barriers to service access are removed. Thus, MST is responsive to the work schedules of economically disadvantaged families, the social stigma of office-based mental health treatment is removed to some extent, and family members feel more comfortable discussing treatment related issues on their own turf.

Sixth, in addition to program aspects contributing to cultural appropriateness noted above, one of the nine MST treatment principles pertains expressly to the developmental appropriateness of interventions. MST treatment integrity is evaluated by parental ratings of adherence to these principles, supervisory ratings of adherence, and, as described later in this paper, multiple procedures are used to promote and maintain treatment fidelity (i.e., adherence to the MST treatment principles). Thus, developmental and cultural appropriateness are specifically targeted for ongoing and continuing evaluation and feedback.

TREATMENT THEORY

The "treatment theory" underlying MST draws upon causal modeling studies of serious antisocial behavior and social-ecological and family systems theories of behavior. The social-ecological model depicts the process of human development as a reciprocal interchange between the individual and "nested concentric structures" that mutually influence one another. Extrafamilial systems, such as school, work, peers, and even community and cultural institutions are seen as interconnected with the individual and his or her family. Importantly, this ecological view that behavior is multidetermined is strongly supported by the causal modeling studies cited earlier. To recap, these studies indicate that a

combination of individual (attributional bias, antisocial attitudes), family (low warmth, high conflict, harsh and/or inconsistent discipline, low monitoring of youth whereabouts, parental problems, low social support), peer (association with deviant peers), school (low family-school bonding, problems with academic and social performance), and neighborhood (transiency, disorganization, criminal subculture) factors are linked with serious antisocial behavior in adolescents. Problem behavior may be a function of difficulty within any of these systems and/or difficulties that characterize the interfaces between these systems (e.g., family-school relations, family-neighborhood relations). Thus, consistent with both the empirically established determinants of serious antisocial behavior and with social-ecological theory, the scope of MST interventions is not limited to the individual adolescent or the family system, but includes difficulties between other systems such as the family-school and family-peer mesosystems.

TREATMENT SPECIFICATION AND CLINICAL PROCEDURES

Specific guidelines for implementing MST for serious problems in youth are presented in the Multisystemic Strategic Procedures Manual (Henggeler et al., 1994), and a treatment manual specifically focusing on antisocial behavior in youth will be published in 1998 by Guilford Press (Henggeler, Schoenwald, et al., in press). All other training materials and manuals are only available through the training program. Information regarding the treatment and training manuals can be obtained from MST Services, Inc. (P. O. Box 21269, Charleston, SC, 29413-1269; phone 843-856-8226; fax 843-856-8227).

A central feature of the MST treatment model is its integration of empirically-based treatment approaches, which have historically focused on a limited aspect of the youth's social ecology (e.g., the individual youth, the family), into a broad-based ecological framework that addresses a range of pertinent factors across family, peer, school, and community contexts. The choice of modality used to address a particular problem is based largely on the empirical literature concerning its efficacy. As such, MST interventions are usually adapted and integrated from pragmatic, problem-focused treatments that have at least some empirical support. These include strategic family therapy, structural family therapy, behavioral parent training, and cognitive behavior therapies. In addition and as appropriate, biological contributors to identified problems are identified and psychopharmacological treatment is integrated with psychosocial treatment.

Concomitant with the integration of empirically-based treatment approaches, a crucial aspect of MST is its emphasis on promoting behavior change in the youth's natural environment. As such, the overriding goal of MST is to empower parents with the skills and resources needed to independently address the inevitable difficulties that arise in raising teenagers and to empower youth to cope with family, peer, school, and neighborhood problems. Parent, and family, is broadly defined to include the adult who serves as the youth's primary parent figure or guardian. Within a context of support and skill building, the therapist places developmentally appropriate demands on the adolescent and family for responsible behavior.

Initial therapy sessions identify the strengths and weaknesses of the adolescent, the family, and their transactions with extrafamilial systems (e.g., peers, friends, school, parental workplace). Problems identified conjointly by family members and the therapist are explicitly targeted for change, and the strengths of each system are used to facilitate such change. Although specific strengths and weaknesses can vary widely from family to family, several problem areas are typically identified for serious juvenile offenders and their families.

At the family level, parents and adolescents frequently display high rates of conflict and low levels of affection. Similarly, parents (or guardians) frequently disagree regarding discipline strategies, and their own personal problems (e.g., substance abuse, depression) often interfere with their ability to provide necessary parenting. Family interventions in MST often attempt to provide the parent(s) with the resources needed for effective parenting and for developing increased family structure and cohesion. Such interventions might include introducing systematic monitoring, reward, and discipline systems; prompting parents to communicate effectively with each other about adolescent problems; problem solving day-to-day conflicts; and developing indigenous social support networks with friends, extended family, church members and so forth.

At the peer level, a frequent goal of treatment is to decrease the youth's involvement with delinquent and drug using peers and to increase his or her association with prosocial peers (e.g., through church youth groups, organized athletics, after school activities). Interventions for this purpose are optimally conducted by the youth's parents, with the guidance of the therapist, and might consist of active support and encouragement of associations with non-problem peers (e.g., providing transportation and increased privileges) and substantive discouragement of associations with deviant peers (e.g., applying significant sanctions).

Family interventions in MST:

. *At the family level*, attempt to provide the parent(s) with the resources needed for effective parenting and for developing increased family structure and cohesion.

. *At the peer level*, a frequent goal of treatment is to decrease the youth's involvement with delinquent and drug using peers and to increase his or her association with prosocial peers.

. *At the school level*, emphasis is placed on developing a collaborative relationship between the parents and school personnel, and for promoting academic efforts.

Likewise, under the guidance of the therapist, the parents develop strategies to monitor and promote the youth's school performance and/or vocational functioning. Typically included in this domain are strategies for opening and maintaining positive communication lines with teachers and for restructuring after school hours to promote academic efforts. Emphasis is placed on developing a collaborative relationship between the parents and school personnel. Finally, although the emphasis of treatment is on systemic change, there are also situations in which individual interventions can facilitate behavioral change in the adolescent or parents. Interventions in these situations generally focus on using cognitive behavior therapy to modify the individual's social perspective-taking skills, belief system, or motivational system, and encouraging the youth to deal assertively with negative peer pressures.

CORE PROGRAM ELEMENTS - THE NINE CORE PRINCIPLES OF MST

As noted above, MST interventions are directed toward individuals, dyadic relations, family relations, peer relations, school performance, and other social systems that are involved in the identified problems. The design and implementation of MST interventions is based on nine core principles of MST. These principles serve to operationalize MST, and evaluations of treatment fidelity are based on participants' (i.e., parent, youth, therapist) ratings of therapists' adherence to these principles. Indeed, we have recently shown that high adherence to the MST principles predicts favorable long-term outcomes for violent and chronic juvenile offenders, whereas poor adherence predicts high rates of rearrest and incarceration. In light of these findings and years of anecdotal evidence (i.e., suggesting

high adherence is linked with favorable outcomes and low adherence with poor outcomes), considerable training, supervisory, and consultative resources are devoted to maximizing therapist adherence to the following MST treatment principles.

Brief summaries of the nine MST principles follow, and extensive explication is provided in Henggeler, Schoenwald et al. (in press).

Principle 1: The Primary Purpose of Assessment is to Understand the Fit Between the Identified Problems and Their Broader Systemic Context

The goal of MST assessment is to understand how identified problems "make sense" in light of the youth's social ecological context. Hence, the therapist integrates information obtained from family members, teachers, referral sources, and so forth to determine the factors (individual, family, peer, school, neighborhood) that are contributing to the problems, singularly or in combination. The targets of interventions are then derived from the hypotheses formulated from the assessment data. These hypotheses are subsequently confirmed or refuted through the outcomes of interventions. When hypotheses are refuted by the ineffectiveness of an intervention, the therapist seeks new information or incorporates lessons learned from the failed intervention to formulate new hypotheses and corresponding interventions. Thus, MST assessment is a reiterative process that proceeds until treatment goals are met.

Principle 2: Therapeutic Contacts Should Emphasize the Positive and Should Use Systemic Strengths as Levers for Change

Therapists must have the capacity to focus on the positive or families will not collaborate with treatment. Without significant family collaboration, treatment gains will be very difficult to achieve. Focusing on family strengths has numerous advantages, including: decreasing negative affect, building feelings of hope and positive expectations, identifying protective factors, decreasing frustration by emphasizing problem solving, and enhancing the caregiver's confidence. Thus, MST therapists are taught where to look for strengths and how to develop and maintain a strength-based focus.

Principle 3: Interventions Should Be Designed to Promote Responsible Behavior and Decrease Irresponsible Behavior among Family Members

The overriding goals of MST are to help parents and youth behave more responsibly. Parental responsibilities include providing structure and discipline, expressing love and nurturance, and meeting basic physical needs. For youth, responsible behavior includes extending effort in school, not harming others, and helping around the home. Such pragmatic conceptualizations of overriding treatment goals can be accepted by stakeholders and family members alike- which help to demystify and concretize the treatment process. Moreover, the emphasis on enhancing responsible behavior is a counterpoint to the usual pathology (e.g., conduct disorder, borderline personality disorder) focus of mental health providers and helps to engender hope for change.

Principle 4: Interventions should be Present-Focused and Action-Oriented, Targeting Specific and Well-Defined Problems

The purpose of this treatment principle is to encourage family transactions that are facilitating clinical progress toward unambiguous outcomes. For example, as detailed by Henggeler, Schoenwald et al. (in press), this principle enables all treatment participants to be fully aware of the direction of treatment

and the criteria used to measure success. Similarly, the expectation is that family members will work actively toward meeting the goals by focusing on present-oriented solutions (versus gaining insight or focusing on the past). Clear goals also allow the therapist and family members to delineate criteria for treatment termination.

Principle 5: Interventions should Target Sequences of Behavior within and between Multiple Systems that Maintain Identified Problems

This principle emphasizes that treatment is aimed at (a) changing family interactions in ways that promote responsible behavior and (b) promoting the family's connections with indigenous prosocial support systems including, for example, the school, competent neighbors and friends, and the church. Consistent with family systems theories of behavior, MST views changing interpersonal transactions within the child's natural environment as the key to ameliorating behavior problems (versus an emphasis on cognitive or attitudinal factors as a mechanism for behavioral change).

Principle 6: Interventions should be Developmentally Appropriate and Fit the Developmental Needs of the Youth

The nature of interventions should vary with developmental level of the youth and family. For example, in families with young adolescents who are presenting serious antisocial behavior, interventions will usually focus on developing appropriate and effective parental discipline strategies. For youth who are nearing 18 years of age, however, interventions may more appropriately focus on developing the individual youth's capacity for independence. Similarly, a developmental emphasis stresses the importance of building adolescents' competencies in peer relations and developing academic and vocational skills that will promote a successful transition to adulthood.

Principle 7: Interventions should be Designed to Require Daily or Weekly Effort by Family Members

Families referred for MST usually have extensive histories of serious problems, and our assumption is that family members and therapists must work very intensively to ameliorate these problems. In addition, the design of interventions that require ongoing efforts from multiple participants affords several therapeutic advantages (Henggeler, Schoenwald, et al., in press) including: more rapid problem resolution than obtained using less intensive interventions; timely identification of treatment nonadherence; continuous evaluation of outcomes, which enables opportunities for corrective interventions; frequent opportunities for family members to experience success and receive positive feedback; and support of family empowerment as members are orchestrating their own changes.

Principle 8: Intervention Effectiveness is Evaluated Continuously from Multiple Perspectives, with Providers Assuming Accountability for Overcoming Barriers to Successful Outcomes.

The accuracy of hypotheses concerning "fit," the efforts of family members, and the viability of interventions are evaluated based on progress toward desired outcomes. Thus, ongoing evaluation of intervention effectiveness is essential to provide timely feedback regarding these three factors (i.e., fit, effort, interventions). When interventions are producing desired results, the therapist can reasonably assume that hypotheses are accurate, family members are working, and the interventions are appropriate. On the other hand, when interventions are not producing desired results, the therapist must critically examine each of the three factors (two of which depend on the therapist's skills) and take corrective actions.

Principle 9: Interventions should be Designed to Promote Treatment Generalization and Long-Term Maintenance of Therapeutic Change by Empowering Care Givers to Address Family Members' Needs across Multiple Systemic Contexts.

Ensuring that treatment gains will generalize and be maintained when treatment ends is a critical and continuous thrust of MST interventions (Henggeler, Schoenwald, et al., in press). To facilitate these outcomes, MST aims to empower families to address current and future problems with the support of an indigenous social network of friends, neighbors, and extended family. Thus, therapists avoid "doing for" the families and stress skill building in the youth and family's natural ecology. In contrast with most mental health interventions, changes are made primarily by family members with therapists acting as consultants, advisors, and advocates.

Although these are the core treatment principles, MST is a dynamic treatment model that will always be in active refinement. For example, through randomized and quasi-experimental studies conducted by the Family Services Research Center at the Medical University of South Carolina, potential enhancements of MST are being investigated as well as modifications of MST to meet the needs of different populations (e.g., children with serious emotional disturbance, maltreated children) and service delivery models (e.g., outpatient, continuum of care). Dissemination efforts, however, will not include substantive modification of MST until such modifications have demonstrated improved outcomes.

PROGRAM BENEFITS AND COST SAVINGS

Outcomes regarding decreased criminal activity, decreased rates of out-of-home placements, and improved family functioning have been described previously. In addition, evidence is emerging of considerable benefits regarding cost savings associated with MST. First, in the Simpsonville study with serious juvenile offenders, the cost of MST was approximately \$4,000 per youth converted to 1996 dollars, which compares favorably to the respective cost in the usual services condition of more than \$10,000 per youth (due to the high rates of incarceration in the usual services condition). Second, in a sample of substance abusing and dependent juvenile offenders who were not, a priori, at imminent risk of out-of-home placement, a cost analysis (Schoenwald, Ward, Henggeler, Pickrel, & Patel, 1996) showed that the incremental costs of MST were nearly offset by the savings incurred during the first year postreferral due to reductions in days of out-of-home placement. Third, preliminary findings from our current study evaluating MST as an alternative to psychiatric hospitalization (Henggeler, Rowland, et al., 1997) show an 85 percent reduction in days hospitalized, which should translate to considerable cost savings when the formal cost analyses are conducted for this project. Finally, these cost savings are especially noteworthy when the superior clinical outcomes and reductions in criminal activity demonstrated by MST are considered.

FUTURE DIRECTIONS

In addition to the aforementioned and ongoing clinical trials that are testing MST with other youth and family populations presenting serious clinical problems (e.g., youth presenting psychiatric emergencies; substance abusing parents of young children), the FSRC has recently been funded to test other extensions of MST. Each of these extensions addresses the needs of an extremely challenging

population.

One project will develop an MST-based continuum of care (i.e., MST-outpatient, MST home-based, MST friendly therapeutic foster care network, and an MST friendly short-term secure setting) in collaboration with neighborhood residents and agency stakeholders. This continuum will provide the needed mental health and substance abuse services for a sample of youth who are currently in out-of-home placement. The youth will be brought back to the community, and the MST-based continuum of care (similar in concept to a managed care entity) will assume responsibility for all treatment needs throughout the duration of the project. The evaluation will focus on clinical outcomes and cost savings.

A second project identifies the neighborhood that has the highest rates of infant mortality, arrest, and out-of-home placements for youth in the state. A partnership will be formed with neighborhood residents and stakeholders, and key problems will be identified conjointly. The FSRC, with community collaboration, will design and implement empirically-based services to address the identified problems. Outcomes in the quasi-experimental study will focus on cost savings and reductions in the identified problems.

Third, an MST team and prevention interventionists (primary and secondary) will be placed in an inner-city middle school that has a high rate of violence, drug use, and dropout. The MST team will provide intensive family-based services for youths who have been expelled or have perpetrated crimes in school, while the other professionals will implement empirically-based violence and drug-use prevention programs and provide consultation to teachers. Again, a quasi-experimental design is being used to examine cost-related issues and ultimate outcomes.

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