

## Toward Evidence-Based Transport of Evidence-Based Treatments: MST as an Example

Sonja K. Schoenwald

**ABSTRACT.** This article describes the journey toward evidence-based transport and implementation in usual care settings of Multisystemic Therapy (MST) for youth with drug abuse and behavioral problems (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998). Research and experience informing the design of the MST transport strategy, progress in evaluating its viability and validity, and implications for future research are described. Findings from transportability research indicate that the MST transport strategy supports the cultivation of therapist, supervisor, and consultant adherence in usual care settings; that such adherence is a consistent predictor of short- and long-term outcomes in such settings; and that clinician and organizational factors also affect adherence and outcomes. These findings have important implications for the transport of other evidence-based practices to usual care settings. doi:10.1080/15470650802071671 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2008 by The Haworth Press. All rights reserved.]

**KEYWORDS.** Transportability, evidence-based practice, organizational factors, fidelity

---

Sonja K. Schoenwald, PhD, is a board member and stockholder in MST Services, LLC, Department of Psychiatry and Behavioral Sciences, Family Services Research Center, Medical University of South Carolina, MUSC, 67 President Street, Charleston, SC 29425 (E-mail: schoensk@musc.edu).

Preparation of this manuscript was supported by grant MH59138 from the National Institute of Mental Health and DA018107 from the National Institute on Drug Abuse. This title takes its inspiration from Grol and Grimshaw (1999).

Journal of Child & Adolescent Substance Abuse, Vol. 17(3) 2008  
Available online at <http://jcasa.haworthpress.com>  
© 2008 by The Haworth Press. All rights reserved.  
doi:10.1080/15470650802071671

In 2003, the President's New Freedom Commission on Mental Health observed with regard to the promotion of evidence-based mental health and substance abuse treatments in clinical practice, "There is an uncomfortable irony in moving forward to implement evidence-based practices in the absence of an evidence base to guide implementation practice" (p. 12). A prior review of physicians' use of evidence-based medicine similarly noted a need for "evidence-based implementation of evidence-based medicine," and that "implementation research needs to come into its own" (Grol & Grimshaw, 1999, p. 503). These observations reflect the reality that how well an intervention works, and how well it is implemented, are two different things. Ineffective interventions can be implemented well, and effective interventions can be implemented poorly (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Individuals and organizations often decide to adopt a new program and equally often fail to implement it successfully (Real & Poole, 2005).

The purpose of this article is to describe the journey toward evidence-based transport and implementation in usual care settings (32 states, 10 countries) of Multisystemic Therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998), which is an evidence-based intervention for youth with substance abuse and other serious problems of conduct. Research and experience informing the design of the MST transport strategy, progress in evaluating its viability and validity, and implications for future research are described. First, however, brief definitions of three related but distinct concepts, dissemination, implementation, and transportability, are provided to delineate the scope of the journey undertaken thus far with MST.

The objective of *dissemination* strategies is to cultivate awareness of and interest in adopting a product or service, and dissemination research examines how and how well this is done. Implicit in the undertaking of dissemination is the assumption that the product or service being promoted will work when used as directed by the intended consumers. To determine whether this is the case, it is necessary to evaluate whether consumers implement as directed the product or service being disseminated. Such evaluation of *implementation* and of factors affecting it, however, occurs rarely (Klein & Sorra, 1996; Real & Poole, 2005). If a product or service has been shown to be effective in a context that differs demonstrably from the context of intended use (e.g., a treatment is tested in an university clinic rather than in a community practice context), then intermediary steps are needed prior to dissemination to identify what it takes to use the treatment as directed in everyday circumstances and the outcomes of that use. These intermediary steps are the focus of

*transportability* research (Hoagwood, Hibbs, Brent, & Jensen, 1995; Schoenwald & Hoagwood, 2001 a,b), and findings from MST transportability research are a key focus of this article.

### ***DEVELOPMENT OF THE MST TRANSPORT SYSTEM***

Following the publication of long-term positive outcomes of MST for juvenile offenders (Borduin et al., 1995; Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993), state and county juvenile justice and mental health systems sought the model developers' assistance in establishing MST programs. A "chicken and egg" dilemma ensued: Some capacity to transport the treatment (e.g., sufficient number of trained therapists, provider organizations) had to be developed before the validity and effects of the capacity-building strategy could be tested.

#### ***Developing Sufficient Clinician Training and Program Support Capacity***

The first challenge in transporting MST programs to community settings was to develop the human resource capacity to provide clinical trials-level training, supervision, consultation, and monitoring to therapists in these usual care settings. Initially, research faculty and MST researchers at the Family Services Research Center (FSRC), Medical University of South Carolina (MUSC) provided training and consultation on a "moonlighting" basis to newly developed MST community-based programs. It soon became apparent, however, that the faculty could not retain their research productivity and at the same time adequately meet the needs of the therapists and provider organizations attempting MST implementation. Hence, funding to hire experienced professionals to provide such training and supervision was sought. Because the training focused on clinicians in community-based provider organizations rather than university faculty or students, the university's ability to offer support for such training positions was constrained.

The South Carolina Department of Health and Human Services (DHHS), however, having received a federal block grant to support family preservation services, expressed interest in training such programs in MST. DHHS agreed to provide initial funding for MST training positions at the FSRC in return for training of family preservation providers within the state. This development presented a first opportunity to "train the trainer," to cultivate expertise in MST and in training other practitioners

to implement MST. Because the state supported the salaries of these trainers, however, they could not provide services to clinicians and organizations outside of the state. Once again, a "moonlighting" arrangement was established to support off-hours training for out-of-state provider organizations. Again, the arrangement taxed the research faculty providing training and support, and it fell short of meeting the needs of organizations attempting to develop and implement MST programs. To address this continuing problem, MUSC and the treatment developers collaborated on the development of a university-licensed technology transfer organization, MST Services, LLC, that could charge training fees to support the salaries of trainers on a full-time basis.

For the next several years, MST Services effectively managed the burgeoning growth in MST programs nationwide. The cultivation of a sufficient number of doctoral-level MST experts within South Carolina to meet the demand for continued expansions throughout the U.S. and abroad was a significant rate-limiting step, however. Moreover, provider organizations expanded their MST programs and became eager to cultivate the expertise needed to train their own staff in MST. Likewise, the state and local government agencies supporting these programs often wished to expand the number of programs within a state or region. To meet continued demand for program development, MST Network Partners were established in organizations and sites that had strong track records in developing and implementing MST programs. The organizations that serve as Network Partners have the capacity to carry out the entire MST transport and implementation process described subsequently, from pre-implementation site assessment through training and ongoing consultation. The important role of the Network Partners in shaping research on treatment effectiveness, transportability, and dissemination is described in the final section of this paper.

### *Cultivating Practice Context—MST Fit*

The MST transport strategy was developed in consideration of four levels of influence on clinical implementation and outcomes: youth/family, clinician, organization, and service system. Treatment researchers were the original architects of the MST transport strategy, so clients (youth and families) and clinicians were their primary focus. The overarching goal of the transport strategy is to achieve for youth and families in usual care settings the positive outcomes achieved in treatment trials of MST. To achieve this goal, it was thought that the training, clinical supervision, and model developer expertise provided to therapists in

MST efficacy and effectiveness trials should be replicated for therapists in usual care settings. The extent to which methods used to train and support clinicians in clinical trials are effective in usual care settings was at the time an empirical question, as few treatments with demonstrated efficacy in research settings had been transported to usual care settings. Empirical tests of this question are generating promising findings (e.g., Sholomskas et al., 2005).

Initially, provider organizations and service systems were considered pertinent to the MST transport strategy only insofar as they seemed to affect how well therapists could implement MST with a specific youth and family. Although case-by-case resolution of organizational and service system impediments to treatment progress remains a characteristic of MST implementation, proactive (i.e., pre-implementation and ongoing) efforts to cultivate alignment of organizational and service system policies and procedures with the demand characteristics of MST is built in to the transport strategy. MST demand characteristics include, for example, a home-based model of service delivery, 24 hours per day, 7 days per week therapist accessibility to families; low caseloads; and provision of specialized and ongoing training. The MST transport strategy might be conceptualized, then, as an "inside out" approach to treatment transport. It was designed by the model developer group to replicate in usual care settings clinical implementation as it occurred in clinical trials, and to address specific organizational and service system factors thought to affect practitioners' ability to implement MST with fidelity in community practice settings.

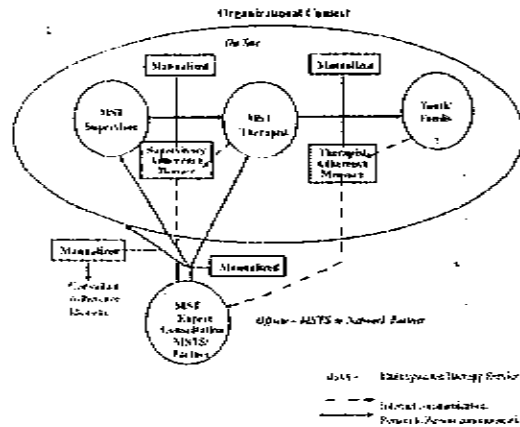
Several other treatment and prevention model developer groups have taken a similar approach in the transport of their evidence-based practices (see, e.g., Chamberlain, 2003; Olds, Hill, O'Brien, Racine, & Moritz, 2003; Sexton & Alexander, 2003). Across these developer groups, factors thought salient to effective implementation (see Schoenwald & Henggeler, 2003) are similar to those identified in the transfer of technology and diffusion of innovation literature, in general (Rogers, 1995), and as this literature has been applied to health care (Ferlie & Shortell, 2001; Grol & Grimshaw, 1999), substance abuse, and mental health services (see, e.g., Backer, David, & Soucy, 1995; Brown, 1995, 2000; Schoenwald & Henggeler, 2002; Schoenwald & Hoagwood, 2001a; Southam-Gerow, Hersberger, & Austin, in press). At the service system level, for example, factors that can affect implementation of MST and other evidence-based practices include: (1) legal mandates and the policies and regulations associated with them, (2) funding levels and mechanisms, and (3) the effectiveness of collaboration among stakeholders

that affect who can receive and deliver an intervention program and how it is delivered (Edwards, Schoenwald, Henggeler, & Strother, 2001). With respect to funding, for example, traditional service reimbursement guidelines have focused on the provision of a predetermined quantity of services (i.e., reimbursement based on number of sessions) or face-to-face contact with the youth. Such guidelines are inconsistent with the MST implementation, which focuses extensively on building caregiver-parenting capacity and directly addresses other risk factors in the youth's social ecology (e.g., peer relations, school performance). Similarly, an array of organizational "implementation policies" (Klein & Knight, 2005) governing such issues as hours of operation, employee transport of clients, full-time dedication of staff to MST, among others, may need to be developed to support MST. Effective collaboration with systems and provider organizations to realign financial and organizational policies, therefore, is critical to the fidelity of MST implementation.

#### **COMPONENTS OF THE MST TRANSPORT STRATEGY**

Consistent with a Continuous Quality Improvement (CQI) philosophy to continually improve "the processes associated with providing a good or service that meets or exceeds customer expectations" (Shortell, Bennett, & Byck, 1998), methods to monitor and improve the implementation and outcomes of MST in usual care settings were also considered important to the fledgling transport strategy. As in CQI approaches attempted in health care, the idea was to design an implementation system that engaged all individuals involved in the delivery effort by establishing a feedback loop that integrated data-based and qualitative feedback about MST implementation at the level of the client family, therapist, supervisor, expert consultant, and organization with the MST program. The resulting and still evolving quality assurance and improvement system is depicted in Figure 1. Core elements of the system are training, supervision, and expert consultation materials and procedures for MST therapists, on-site supervisors, and expert consultants remote from the implementation site; program support materials and procedures for the organization; measures of implementation adherence for therapists, supervisors, and consultants; pre-implementation and semi-annual assessments of program implementation and factors affecting it; and a web-based implementation tracking and feedback system provided through the MST Institute ([www.mstinstitute.org](http://www.mstinstitute.org)). Developing, implementing, and measuring the

FIGURE 1. MST Quality Assurance and Improvement System



components of this quality assurance and improvement system and empirically testing relations between them and their impact on youth outcomes is an ongoing emphasis of our research.

**Program Development**

Before clinical implementation begins, a systematic site assessment process is undertaken to assess the philosophical compatibility of MST with community agency and consumer groups; identify referral and funding incentives and disincentives that could impact long-term sustainability of the program; establish the interagency collaboration necessary for the MST program and client families to take the lead in clinical decision making; and align the structure, procedures, and culture of the organization hosting the MST program to support therapist adherence to MST and provider accountability for family engagement and outcomes. That process, which can take up to one year to complete, culminates in the conjoint development by the site and MST Services or an MST Network Partner of a site-specific MST Program Goals and Guidelines document (Strother, Swenson, & Schoenwald, 1998; Edwards et al., 2001). The issues detailed in this document are revisited semi-annually by the MST consultant, clinical team, provider organization leadership, and system-level stakeholders.

Next, the process of hiring the MST supervisors and therapists begins with support from the MST consultant and web-based materials designed to aid in the staff recruitment and selection process. Once the MST program has hired its clinical staff, a date for the initial 5-day orientation training is established. In anticipation of the opening of the program to referrals following this orientation training, MST supervisors and therapists cultivate connections with agencies and individuals in the community that can affect which youths and families are referred to the MST program and what happens after they are enrolled. Examples of key stakeholders include judges, probation officers, school principals, and child welfare workers. These community stakeholders and others that participated in the pre-implementation site assessment are invited to attend the first day of orientation training with the MST clinicians.

### *Training and Ongoing Support at Multiple Levels*

Training materials include a published treatment manual for clinicians (Henggeler et al., 1998), supervision manual for MST supervisors who are located on-site (Henggeler & Schoenwald, 1998), consultation manual for MST expert consultants who are located off-site (Schoenwald, 1998), and organizational manual for MST program administrators (Strother et al., 1998). Validated implementation measures include therapist adherence as reported by the youth's caregivers (Henggeler & Borduin, 1992), supervisor adherence as reported by therapists (Schoenwald, Henggeler, & Edwards, 1998), and consultant adherence as reported by therapists and supervisors (Schoenwald, 2001). At the clinical level, implementation support includes on-site initial 5-day orientation training for the MST therapists and supervisor with additional training for the supervisor, on-site weekly group supervision with a supervisor who is receiving additional training in MST supervision from the MST expert consultant, weekly consultation with an MST expert, and quarterly 1½ day on-site booster training with the consultant. The therapists, supervisor, and consultant use structured written formats to exchange information about the clinical conceptualization, progress, and barriers to treatment progress for each case weekly. In addition, field supervision (e.g., supervisor attending treatment sessions with therapists and families) and consultation (e.g., expert consultant attending treatment sessions and supervision sessions during quarterly booster training) and periodic review of audiotapes of treatment and supervision sessions inform supervisors and consultants about case progress and clinician development. This information, along with data on the therapist and supervisor adherence

measures, is used to develop conjointly with therapists and supervisors plans for reinforcing and further developing the skills and competencies needed to effectively implement MST.

At the program and organizational levels, the MST expert consultant works with the clinical team and organizational management and leadership to help maintain policies and procedures that support MST implementation, as described earlier. The consultant also works with the team and provider organization to identify and address program drift, which can emanate from sources external (e.g., judge's wish to widen the net of eligible youths beyond those for whom MST has proven effective; Medicaid changes in funding rates or mechanisms) and internal (e.g., organization's desire to use MST staff to perform other tasks) to the program.

#### *Fidelity Measurement at Multiple Levels*

At the time MST Services was established, the MST Therapist Adherence Measure (TAM; Henggeler & Borduin, 1992) had been developed and was being used in effectiveness research studies. Procedures for the collection, scoring, and interpretation of adherence data were not available for community-based providers, however. Also lacking were measures of supervisor and consultant fidelity to the MST supervision and expert consultation protocols, respectively. Development and validation of such measures, however, requires access to a relatively large number of therapists, supervisors, and consultants working in community settings. When a sufficient number of MST programs had been established, the U.S. Office of Juvenile Justice and Delinquency Prevention (OJJDP) supported a 9-site study of the viability of the MST transport model. This project included the initial development of a web-based platform to support the reporting, scoring, and interpretation of therapist adherence and youth outcomes via the MST Institute ([www.mstinstitute.org](http://www.mstinstitute.org)), the development of the MST supervision and consultation manuals and measures, and a corresponding evaluation of these measures.

*Therapist Adherence Measure (TAM; Henggeler & Borduin, 1992).* The 26-item, Likert format MST TAM (Henggeler & Borduin, 1992) was developed by expert consensus to assess therapist adherence to the nine principles of MST. The TAM was shown in two randomized clinical trials of MST with juvenile offenders (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Pickrel, & Brondino, 1999) to predict reductions in youth arrests, days incarcerated, soft drug use, aggression, and other antisocial behavior problems as well as improvements

in family functioning (Huey, Henggeler, Brondino, & Pickrel, 2000; Schoenwald, Henggeler, Brondino, & Rowland, 2000). Although caregiver, therapist, and youth reports on the measure were obtained in these trials, caregiver reports were the better predictors of youth outcomes (Schoenwald et al., 2000).

The TAM items were based largely on the nine MST treatment principles. For example, Principle 1 states, "the primary purpose of assessment is to understand the fit between the identified problems and their broader systemic context" (Henggeler et al., 1998, p. 23). A corresponding item on the TAM reads "the therapist tried to understand how the family's problems all fit together" (Henggeler et al., 1998, p. 23). Similarly, Principle 4 states "interventions should be present-focused and action-oriented, targeting specific and well-defined problems," and corresponding TAM items read "the therapist recommended that family members do specific things to solve their problems," and "the family knew exactly which problems were being worked on."

A multi-factor structure for caregiver reports on the TAM emerged in early studies (Henggeler et al., 1997; Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002), but this structure was based on analyses with relatively small sample sizes, contributing to instability of the observed factor structure. More recently, reliability and confirmatory factor analyses from a much larger and more diverse sample of caregivers and therapists in a 45-site NIMH-funded MST Transportability Study provided the opportunity to better examine and improve the psychometric aspects of the TAM. Analyses supported a single-factor solution using 15 reliable items (Schoenwald, Sheidow, Letourneau, & Liao, 2003) that had a Cronbach's alpha of .90. Therapist adherence appeared to be a stable construct over treatment episode within families (i.e., intraclass correlation coefficient for time of .51). Results of the single-factor TAM scale development analyses are detailed in a technical report (Letourneau, Sheidow, & Schoenwald, 2002). The Transportability Study also included 12 new items that indexed whether treatment sessions focused on important aspects of the youths' school, peer, and neighborhood/social support systems, consistent with the MST model. Nine of these items were retained in further psychometric analyses of the TAM using Rasch modeling. The resulting 28-item scale (19 original TAM items + 9 new items) is known as the TAM-Revised (TAM-R; Henggeler, Borduin, Schoenwald, Huey, & Chapman, 2006).

*Supervisor Adherence Measure (SAM; Schoenwald, Henggeler, & Edwards, 1998).* The 43-item, Likert Format Supervisor Adherence Measure (SAM; Schoenwald et al., 1998) was developed by expert

consensus and is based on the rational constructs of supervision described in the MST Supervisory Manual (Henggeler & Schoenwald, 1998). Therapists rate their MST supervisor on the SAM at 2-month intervals. Exploratory and confirmatory factor analyses of SAM data collected from 74 MST therapists reporting on supervisors in 12 MST programs supported a three-factor solution for the SAM (Henggeler, Schoenwald, Letourneau, Liao, & Edwards, 2002). These factors were labeled: *Focus on analytic process and MST principles*, *Develop clinicians' MST competencies*, and *Expertise in MST and empirically supported treatments*. Reliabilities for the three factors ranged from .89 to .98.

More recently, Rasch modeling techniques were used with the SAM data from the much larger sample of therapists and supervisors participating in the MST Transportability Study. Thirty-seven of the original 43 items were retained, and these comprised four subscales (Schoenwald, Chapman, & Sheidow, 2006): *Structure and Process of supervision (SP)*, *supervisor promotes Adherence to the MST treatment Principles (AP)*, *supervisor promotes use of the MST Analytic Process (ANP)*, and *supervisor promotes clinician development of the competencies needed to implement MST (CD)*. Sample items include: from the SP scale, "Case summaries were used during discussion of the cases"; from the AP scale, "Interventions discussed targeted sequences of interaction between family members"; from the ANP scale, "The supervisor asked clinicians for evidence to support their hypotheses about the causes of problems targeted for change or of barriers to intervention success"; and from the CD scale "Within the past two months, the supervisor and I have set goals for my development of specific competencies in MST."

*Consultant Adherence Measure (CAM; Schoenwald, 2001)*. The 44-item Likert format Consultant Adherence Measure (CAM) was developed by expert consensus and is based on the rational constructs of consultation described in the MST consultation manual (Schoenwald, 1998). Therapists and supervisors rate their consultant on the CAM every two months. Exploratory and confirmatory factor analyses of 249 therapist ratings of 30 consultants across two study samples yielded a 3-factor structure. The three scales were labeled *Perceived Consultant Competence (PCC)*, *MST Procedures (MSTP)*, and *Alliance (A)*, and Cronbach's alpha ranged from .91 to .94 for these scales (Schoenwald, Sheidow, & Letourneau, 2004). The PCC scale indexes therapists' perceptions that the consultant is knowledgeable, skilled in, and able to teach MST (e.g., "How skilled do you think your consultant is in teaching clinicians to do MST?"). The MSTP scale indexes consultant use of MST-specific assessment, intervention, and analytic techniques when helping therapists

to solve case-specific problems (e.g., "The consultant explained how to implement specific intervention strategies for a case."). The A scale reflects therapists' perceptions that the consultant was attentive and supportive of them (e.g., "The consultant really listened when clinicians talked.").

### *Outcome Measurement*

Three strategies have been pursued to obtain and include youth outcomes data in the MST Internet-based feedback system. The first was to develop and attempt validation of brief indices of youth behavior and criminal activity that could be administered to caregivers by telephone as easily and quickly as the TAM. Thus, in the OJJDP-funded 9-site study, parent reports on youth behavioral and emotional symptoms pre- and post-treatment were obtained on four items designed to index depressed affect, nervousness, substance use, and temper outbursts. The reliability estimate for this scale, however, was modest (Cronbach's alpha .57) (Schoenwald, Hailiday-Boykins, & Henggeler, 2003). Caregivers also reported the lifetime number of youth arrests and out of home placements pre-treatment, during treatment, and following treatment. A second strategy, currently being piloted with select programs using an enhanced version of the website, is to obtain therapist reports on short-term youth and family outcomes upon discharge using simplified versions of discharge measures used in the MST Transportability study (Schoenwald, Sheidow et al., 2003). The third strategy, which is both more valid and costly, is to increase stakeholder interest in and funding of the collection, coding, and reporting of data on youth criminal outcomes from archival sources. Unfortunately, however, the provider organizations hosting MST programs are generally not authorized to obtain access to such data, and many referral and funding agencies report being sufficiently satisfied with their experiences of MST programs to forego the expense associated with extracting follow up data on criminal outcomes from court or agency records. Thus, the pre-implementation site assessment process described previously has begun to more explicitly address with stakeholders the commitment of resources needed to obtain such data. Efforts to obtain and include reliable and valid outcome data in the web-based system are ongoing and require grappling with service system barriers related to financial resources and legal constraints on reporting of juvenile criminal activity.

## VALIDATION OF THE MST TRANSPORT SYSTEM

### *Conceptual Framework*

In 1994, when strategies to meet community demand for MST programs were first being considered, research on the transportability and implementation of evidence-based substance abuse and mental health services had barely begun. Indeed, such research is even now in its early stages of construction. Pertinent theory and research is difficult to access and synthesize because it is scattered across so many fields; poorly indexed; usually considered from the perspective of a single discipline (e.g., organizational vs. economic vs. psychological); and plagued by methodological limitations (Fixsen et al., 2005; Grimshaw et al., 2001; Grol & Grimshaw, 1999; Real & Pool, 2005). The implications of extant theory and research, however, suggest that the effective transport and implementation of treatment technologies requires change at four levels (Ferlie & Shortell, 2001; Grol & Grimshaw, 1999): (1) larger service system, (2) implementing organization, (3) individuals delivering the product or service (practitioners), and (4) individual consumers of the service.

Interventions used to effect change at any one level are likely to be multifaceted, and may differ from those capable of effecting change at another level (Grol & Grimshaw, 1999; Schoenwald & Henggeler, 2004). At the service system level, for example, coercive strategies such as regulations, legal mandates, and budget manipulation can be effective in establishing a “floor” and “ceiling” for local variations in practice (Ferlie & Shortell, 2001). At the practitioner level, however, a combination of educational, behavioral, and social influence strategies might be needed to facilitate learning and application of a new treatment model. At the organizational level, strategies used to develop effective “implementation policies” (Klein & Knight, 2005) might be needed to “restructure care processes” to build a specific innovation into routines (Grol & Grimshaw, 1999). A different set of strategies might be needed to cultivate support for innovation in the organization more generally (Glisson & Schoenwald, 2005; Lehman, Simpson, & Greener, 2002). Effective strategies to transport and implement evidence-based treatments, therefore, might require attention to pertinent variables at each of these levels of the practice context and differentiated strategies to effect change within and across these levels. Efforts to examine the viability and validity of the differentiated strategies used to support the transport and implementation of MST in usual care settings are described next.

### ***Program Development***

Although formal evaluation of the MST pre-implementation program development process has not yet been undertaken, descriptive accounts of the transport strategies undertaken by other intervention model developer groups (e.g., Chamberlain, 2003; Olds et al., 2003; Sexton & Alexander, 2003) suggest there is some face validity to the process. As summarized elsewhere (Schoenwald & Henggeler, 2003; Fixsen et al., 2005), these groups have established organizations dedicated to the transport process, but linked with the research institution that continues to refine and test the intervention model in question. Across these developer groups and prior to implementation, efforts are made to align pertinent policy and funding mechanisms with the specific demand characteristics of the intervention program, collaborate with those stakeholders within a program site that can affect who receives the program and how, and implement web-based feedback systems (Schoenwald & Reid, 2006).

### ***Quality Assurance and Improvement Protocols***

Empirical evaluation of linkages among the components of the MST quality assurance and improvement system, their impact on youth outcomes, and other factors that could affect the implementation of MST in usual care settings began in 1998 through the aforementioned OJJDP-funded study. In 1999, the National Institute of Mental Health (NIMH) funded the 45-site MST Transportability Study. The Transportability Study examined (1) the association between therapist adherence to the MST treatment principles and youth outcomes in usual care settings, (2) organizational and supervisory predictors of therapist adherence, (3) therapist predictors of adherence, and (4) the effects of all predictors on youth outcomes to be mediated by adherence. A summary of published and newly emerging findings from the Transportability Study follows.

*Therapist Adherence–Youth Outcomes Linkages.* Data from the first 666 youth and families served by the first 217 therapists enrolled in the MST Transportability study indicated therapist adherence to MST principles predicted post-treatment reductions in youth behavior problems (Schoenwald, Sheidow et al., 2003). Significant pre- and post-treatment differences in youth problems, as indexed by the Child Behavior Checklist (Achenbach, 1991) and Vanderbilt Functioning Inventory (Bickman, Lambert, Karver, & Andrade, 1998), were similar in magnitude to those found in randomized trials of MST. And, higher therapist adherence as reported by the youth's caregiver on the TAM was associated with greater

reductions in youth behavior problems post-treatment. Recently, completed analyses of youth criminal outcomes following treatment completion support the robust nature of the adherence-outcomes link. For example, controlling for youth pre-treatment criminal history, age, gender, and ethnicity, the rate of criminal charges up to 2.5 years post-treatment was reduced by 38% for each one standard deviation increase in therapist adherence as measured by the TAM-R (Schoenwald, Chapman, & Sheidow, 2006). Thus, the Transportability Study has replicated the significant associations between therapist adherence and youth outcomes that were observed in MST clinical trials. Such findings provided credible support for the viability of the MST transport system.

*Supervisor Adherence, Therapist Adherence, and Youth Outcomes.* As described earlier, findings from the initial SAM validation study supported the reliability and construct validity of three subscales. Examination of the predictive validity of the SAM with respect to therapist adherence, however, yielded some unexpected findings. For example, supervisory focus on MST treatment principles and the development of therapist competence were associated with lower therapist adherence (Henggeler et al., 2002). To explain these findings, therapist adherence difficulties were hypothesized as prompting supervisor focus on clinician development. Because SAM and TAM data were collected concurrently in this initial SAM validation study, the direction of hypothesized effects (supervisor responding to therapist behavior vs. therapist responding to supervisor behavior) could not be examined. The prospective longitudinal design of the Transportability Study, however, facilitated examination of the direction of effects.

Multilevel analyses of SAM and TAM data from the Transportability Study indicate that supervisor adherence predicts reductions in youth criminal behavior up to 2 years post-treatment, and that supervisor and therapist adherence are related in predictable ways (Schoenwald, Chapman, & Sheidow, 2006). Indeed, some of the emerging findings on the impact of supervisor fidelity on therapist adherence and youth criminal outcomes are quite dramatic. For example, during a youth's treatment episode, a one standard deviation increase over a supervisor's typical adherence on the SAM was associated with a 43-45% lower rate of post-treatment charges for youth. Similarly, a one standard deviation increase in supervisors' overall average adherence on the CD (i.e., supervisor promotes clinician development of the competencies needed to implement MST) and AP (i.e., supervisor promotes Adherence to the MST treatment Principles) subscales of the SAM predicted 14% and 16% increases in therapist adherence as measured by the TAM-R, respectively.

Thus, supervisory adherence to the MST supervision protocol plays a significant role in promoting both therapist fidelity and youth outcomes.

*Consultant Adherence, Therapist Adherence, and Outcomes.* The predictive validity of the CAM with respect to therapist adherence was assessed in multilevel analyses using two samples of therapists, consultants, and families, one of which was drawn from the Transportability Study (Schoenwald, Sheidow, & Letourneau, 2004). Random effects regression models demonstrated associations between consultant behavior, therapist adherence, and post-treatment youth behavior problems and functioning. Across both samples, the Perceived Consultant Competence and Alliance scales of the CAM related to therapist MST adherence. As expected, the direction of the relationship was positive for the Perceived Consultant Competence scale. Alliance, however, was negatively related to therapist adherence after controlling for the effects of Consultant Competence. Thus, consultant behaviors intended to convey support and maintain alliance with the therapist appear to have deleterious effects on therapist adherence when consultant competence is perceived as low.

With respect to youth outcomes, higher ratings on the CAM MST Procedures scale predicted lower youth Externalizing and Internalizing problems post-treatment, and higher ratings on the Consultant Competence scale predicted decreases in problem functioning (i.e., improved functioning). Alliance, however, was positively associated with Externalizing and Internalizing problems after controlling for Consultant Competence. This finding suggests that, in the absence of consultant competence, the presence of a supportive alliance between consultant and therapist does not facilitate favorable youth outcomes.

*Organizational Climate and Structure, Therapist Adherence, and Outcomes.* Evidence from a partial sample of therapists and families in the Transportability Study suggested that certain organizational climate (e.g., opportunities for advancement and reward, energized and effective climate) and structure (e.g., participation in decision making, hierarchy of authority) variables directly affected youth behavior and treatment discharge circumstances (Schoenwald, Sheidow et al., 2003). Counter to study hypotheses, however, organizational factors were unrelated to therapist MST adherence. In addition, the direction of associations between some organizational climate variables and youth outcomes countered expectations. Analyses conducted to clarify these findings suggested that therapist adherence during the youth's treatment moderated the effects of organizational climate and structure on youth outcomes. Analyses currently underway of organizational data from the entire Transportability sample of therapists suggests refinement is

needed of the organizational climate factor structure found in the partial sample, and that a stressful organizational climate predicts lower therapist adherence as measured by the TAM-R (Schoenwald, Sheidow, Chapman, Carter, & Letourneau, 2006). With support from the National Institute of Drug Abuse (Schoenwald, PI), examination of relations between organizational climate and structure, therapist adherence, and longer-term (2.5-4 years) youth criminal and substance abuse outcomes is underway.

*Therapist and Client Predictors of Adherence and Outcomes.* Among the variables that distinguish between the treatment provided in efficacy trials and that provided in community-based practice settings are the individuals providing treatment. Thus, examination of therapist variables that might affect adherence and outcomes in usual care settings has been of interest in the MST transport and evaluation plan. Results from the Transportability Study (Schoenwald, Letourneau, & Halliday-Boykins, 2005) indicated that therapist adherence to MST was not predicted by therapist professional training and experience, endorsement of the MST model, perceived difficulty and rewards of doing MST, and perceived similarity of MST to treatments provided previously. Lower adherence, however, was predicted by therapist perceptions that the flexible hours required to implement MST are problematic. These findings suggest that the training, clinical supervision, expert consultation, and feedback system used to support therapist implementation of MST may be sufficient to enable clinicians from diverse professional and educational backgrounds to implement this complex and individualized treatment in usual care settings. The findings also demonstrate, however, that adherence can be affected by concrete, practical aspects of implementation, such as the 24 hours per day, 7 days per week availability to client families. Thus, just as MST therapists address both the concrete and psychosocial needs of youth and families they serve, so too do MST supervisors, program administrators, and consultants need to identify and help design strategies to mitigate difficulties associated with concrete issues for therapists such as the irregular hours required to meet the needs of youths and families being served by MST.

Findings from the Transportability Study also showed that therapist-caregiver similarity on ethnicity and gender predicted higher adherence, which replicated previous findings (Schoenwald, Halliday-Boykins, & Henggeler, 2003). In the Transportability Study, ethnic similarity in therapist-caregiver pairs also predicted greater reductions in youth behavior problems 6 months post-treatment, and therapist MST adherence partially mediated these associations (Halliday-Boykins, Schoenwald, & Letourneau, 2005). The relationship between caregiver-therapist ethnic

similarity and outcomes did not hold, however, in predicting youth criminal behavior (Schoenwald, Chapman, & Halliday-Boykins, 2006). Research is needed to understand aspects of treatment associated with caregiver-reported adherence ratings and short-term youth outcomes in ethnic and gender matched caregiver-therapist pairs and apparent absence of such association with criminal outcomes.

### ***MST TRANSPORTED: FUTURE DIRECTIONS***

Currently, the MST transport strategy—as implemented by MST Services and its 15 Network Partners (4 of them international)—reaches approximately 17,300 youths in 32 states and 10 countries per year. As the number of Network Partners increases, it will be possible to better specify the multi-component strategy used to cultivate their expertise in providing training and ongoing consultation to MST therapists and supervisors and aligning organizational and service system policies and practices to support MST implementation. Empirical examination of the effectiveness of this strategy for developing indigenous expertise in MST and its transport is a priority of our research.

Meanwhile, to capitalize on the expertise and learning opportunities among the clinicians, provider organizations, government agencies and third-party payers responsible for populations served by the Network Partners and MST Services, a web-based portal for discussion and feedback has been established, as has a quarterly conference call and annual meeting. This national and international community of learners is sharing strategies they use to navigate the challenges to fidelity of implementation and program sustainability encountered in their respective communities and service systems. This information, in turn, is used to revise the materials and processes that support the still evolving protocol to cultivate indigenous expertise.

This practice community is actively engaged in propelling forward new research that represents several steps in the cycle of effectiveness to dissemination (e.g., Schoenwald & Hoagwood, 2001b; Weisz, 2000). Community-based MST programs are increasingly the venue for empirical testing via randomized effectiveness trials of MST internationally (Ogden & Halliday-Boykins, 2004) and of adaptations of MST for populations, such as juvenile sex offenders (Henggeler, Letourneau, Borduin, & Schewe, 2006) and physically abused adolescents (McDermott, Bor, Swenson, Lee, & Stallman, 2006) for whom MST had previously been tested in efficacy or small-scale effectiveness trials. MST programs

are partners in a randomized trial testing training approaches to support the uptake and implementation of evidence-based treatments other than MST (Henggeler, Sheidow, Cunningham, Shapiro, Ford, & Donohue, 2006), and in pilot studies of new adaptations of MST, some of which are described in this special series.

### CONCLUSION

The transportability strategy originally undertaken to meet community demand for MST for juvenile offenders has generated the capacity to empirically test questions ranging from the feasibility and safety of MST adaptations to the viability and effectiveness of transport strategies for MST and other treatment approaches (e.g., CM). Moreover, research undertaken by this robust and sustained collaboration among treatment and services researchers, the community of practice (clinicians, provider organizations, and service system stakeholders), purveyors of MST expertise (MST Services, Network Partners), and model developers will greatly inform efforts to transport evidence-based practices to usual care settings.

### REFERENCES

- Achenbach T.M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont, Department of Psychiatry.
- Backer, T.E., David, S.L., & Soucy, G. (Eds.) (1995). *Reviewing the behavioral science knowledge base on technology transfer* (NIDA Research Monograph 155, NIH Publication No. 95-4035). Rockville, MD: National Institute on Drug Abuse.
- Bickman, L., Lambert, E. W., Karver, M., & Andrade, A. R. (1998). Two low-cost measures of child and adolescent functioning for services research. *Evaluation and Programming Planning, 21*, 263-275.
- Borduin, C. M., Mann, B. J., Cone, L. T., Henggeler, S. W., Fucci, B. R., Blaske, D. M., & Williams, R. A. (1995). Multisystemic treatment of serious juvenile offenders: Long-term prevention of criminality and violence. *Journal of Consulting and Clinical Psychology, 63*, 569-578.
- Brown, B.S. (1995). Reducing impediments to technology transfer in drug abuse programming. In Backer, T.E., David, S.L., & Soucy, G. (Eds.) (1995). *Reviewing the behavioral science knowledge base on technology transfer* (NIDA Research Monograph 155, NIH Publication No. 95-4035). Rockville, MD: National Institute on Drug Abuse.
- Brown, B.S. (2000). From research to practice: The bridge is out and the water's rising. In J.A. Levy, R.C. Stephens, & D.C. McBride (Eds.), *Emerging issues in the field of*

- drug abuse. *Advances in Medical Sociology, Vol. 7* (pp. 345-365). Stamford, CT: JAI Press.
- Chamberlain, P. (2003). The Oregon Treatment Foster Care Model: Features, Outcomes, and Progress in Dissemination. Special Series, Current strategies for moving evidence-based interventions into clinical practice. *Cognitive and Behavioral Practice, 10*, 303-311.
- Edwards, D.L., Schoenwald, S.K., Henggeler, S.W., & Strother, K.B. (2001). A multi-level perspective on the implementation of Multisystemic Therapy (MST): Attempting dissemination with fidelity. In G.A. Bernfeld, D.P. Farrington, & A.W. Leschied (Eds.), *Offender rehabilitation in practice: Implementing and evaluating effective programs* (pp. 97-120). London: Wiley.
- Ferlie, E. B., & Shortell, S. M. (2001). Improving the quality of health care in the United Kingdom and the United States: A framework for change. *The Milbank Quarterly, 79*, 281-315.
- Fixsen, D.L., Naoom, S.F., Blasé, K.A., Friedman, R.M., & Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature*. Tampa, FL: University of South Florida, Louis De la Parte Florida Mental Health Institute, The National Implementation Research Network.
- Glisson, C., & Schoenwald, S.K. (2005). An Organizational and Community Development Strategy for Implementing Evidence-Based Children's Mental Health Treatments. *Mental Health Services Research, 7*, 1-17.
- Grimshaw, J.M., Shirran, L., Thomas, R., Mowatt, G., Fraser, C., Bero, L., Grilli, R., Harvey, E., Oxman, A., & O'Brien, M.A. (2001). Changing provider behavior: An overview of systematic reviews of interventions. *Medical Care, 39*, 8 (Suppl 2), pp. II-2 – II-45.
- Grol, R., & Grimshaw, J. (1999). Evidence-based implementation of evidence-based medicine. *Journal on Quality Improvement, 25*, 503-513.
- Halliday-Boykins, C.A., Schoenwald, S.K., & Letourneau, E.J. (2005). Caregiver-therapist ethnic similarity predicts youth outcomes from an empirically based treatment. *Journal of Consulting and Clinical Psychology, 73*, 808-818.
- Henggeler, S.W., & Borduin, C. M. (1992). *Multisystemic Therapy Adherence Scales*. Unpublished instrument. Charleston, SC: Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina.
- Henggeler, S.W., Borduin, C.M., Schoenwald, S.K., Huey, S.J., & Chapman, J.E. (2006). *Multisystemic Therapy Adherence Scale-Revised (TAM-R)*. Unpublished instrument. Charleston, SC: Department of Psychiatry & Behavioral Sciences, Medical University of South Carolina.
- Henggeler, S. W., Letourneau, E. J., Borduin, C. M., & Schewe, P. (2006). *Effectiveness Trial of Multisystemic Therapy with Juvenile Sexual Offenders*. Study in progress.
- Henggeler, S. W., Melton, G. B., Brondino, M. J., Scherer, D. G., & Hanley, J. H. (1997). Multisystemic therapy with violent and chronic juvenile offenders and their families: The role of treatment fidelity in successful dissemination. *Journal of Consulting and Clinical Psychology, 65*, 821-833.
- Henggeler, S.W., Melton, G.B., Smith, L.A., Schoenwald, S.K., & Hanley, J. (1993). Family preservation using Multisystemic Treatment: Long term follow-up to a clinical trial with serious juvenile offenders. *Journal of Child and Family Studies, 2*, 283-293.

- Henggeler, S. W., Pickrel, S. G., & Brondino, M. J. (1999). Multisystemic treatment of substance abusing and dependent delinquents: Outcomes, treatment fidelity, and transportability. *Mental Health Services Research, 1*, 171-184.
- Henggeler, S.W., & Schoenwald, S.K. (1998). *The MST supervisory manual: Promoting quality assurance at the clinical level*. Charleston, SC: The MST Institute
- Henggeler, S.W., & Schoenwald, S.K. (1999). The role of quality assurance in achieving outcomes in MST programs. *Journal of Juvenile Justice and Detention Services, 14*, 1-17.
- Henggeler, S.W., Schoenwald, S.K., Borduin, C.M., Rowland, M.D., & Cunningham, P.B. (1998). *Multisystemic treatment of antisocial behavior in children and adolescents*. New York and London: Guilford Press.
- Henggeler, S. W., Sheidow, A. J., Cunningham, P. B., Shapiro, S. B., Ford, J. D., & Donohue, B. C. (2005). *Evaluating two strategies for transporting contingency management to community practice settings*. Invited presentation at the 2005 Joint Meeting on Adolescent Treatment Effectiveness. Washington, DC.
- Hoagwood, K., Hibbs, E., Brent, D., & Jensen, P. (1995). Introduction to the special section: Efficacy and effectiveness in studies of child and adolescent psychotherapy. *Journal of Consulting and Clinical Psychology, 63*, 683-687.
- Huey, S. J., Henggeler, S. W., Brondino, M. J., & Pickrel, S. G. (2000). Mechanisms of change in multisystemic therapy: Reducing delinquent behavior through therapist adherence and improved family and peer functioning. *Journal of Consulting and Clinical Psychology, 68*, 451-467.
- Klein, K.J., & Knight, A.P. (2005). Innovation Implementation: Overcoming the Challenge. *Current Directions in Psychological Science, 14* (5), 243-246.
- Klein, K.J., & Sorra, J.S. (1996). The challenge of innovation implementation. *Academy of Management Review, 21*, 1055-1080.
- Lehman, W.E.K., Green, J.M., & Simpson, D.D. (2002). Assessing organizational readiness for change. *Journal of Substance Abuse Treatment, 22*, 197-210.
- Letourneau, E.J., Sheidow, A.J., & Schoenwald, S.K. (2002). *Structure and reliability of the MST therapist adherence scale in a large community sample*. Charleston, SC: Family Services Research Center, Medical University of South Carolina.
- McDermott, B.M., Bor, W., Swenson, C.C., Lee, E.M., & Stallman, H.M. (2006). *Project Safe: A randomised trial of Multisystemic Therapy (MST) with physically abused and neglected children in the Inala area of Brisbane, Australia*. [www.kidsinmind.org.au/research](http://www.kidsinmind.org.au/research).
- Ogden, T., & Halliday-Boykins, C. A. (2004). Multisystemic treatment of antisocial adolescents in Norway: Replication of clinical outcomes outside of the U.S. *Child and Adolescent Mental Health, 9*, 77-83.
- Olds, D.L., Hill, P.L., O'Brien, R., Racine, D., & Moritz, P. (2003). Taking Preventive Intervention to Scale: The Nurse-Family Partnership. Special Series, Current strategies for moving evidence-based interventions into clinical practice. *Cognitive and Behavioral Practice, 10*, 278-289.
- President's New Freedom Commission on Mental Health. (2003). *Achieving the Promise: Transforming Mental Health Care in America*.

- Real, K., & Pool, M. S. (2005). Innovation implementation: Conceptualization and measurement in organizational research. *Research in Organizational Change and Development, 15*, 63-134.
- Rogers, E. M. (1995). *Diffusion of Innovations* (4th ed.). New York: The Free Press.
- Schoenwald, S.K. (1998). *Multisystemic therapy consultation manual*. Charleston, SC: The MST Institute.
- Schoenwald, S.K. (2001). *The MST Consultant Adherence Measure*. Charleston, SC: Family Services Research Center, Medical University of South Carolina.
- Schoenwald, S.K., Chapman, J.E., & Halliday-Boykins, C.A. (2006). *Limits of caregiver-therapist ethnic similarity effects on youth outcomes of an empirically based treatment*. Manuscript in preparation.
- Schoenwald, S.K., Chapman, J.E., & Sheidow, A.J. (2006, March). Implementation fidelity in MST. In S.K. Schoenwald & J. Reid, Co-Chairs, *Community-based model programs panel: Implementing with fidelity*. Blueprints Conference, 2006: Evidence-based programs, research-to-practice conference, Denver, CO.
- Schoenwald, S.K., Halliday-Boykins, C., & Henggeler, S.W. (2003). Client-level predictors of adherence to MST in community service settings. *Family Process, 42*, 345-359.
- Schoenwald, S.K. & Henggeler, S.W. (2002). Mental health services research and family-based treatment: Bridging the gap. In H. Liddle, G. Diamond, R. Levant, J. Bray, & D. Santiseban (Eds.), *Family Psychology Intervention Science* (pp. 259-282). Washington, DC: American Psychological Association.
- Schoenwald, S.K., & Henggeler, S.W. (2003). Current strategies for moving evidence-based interventions into clinical practice: Introductory comments. Special Series, Current strategies for moving evidence-based interventions into clinical practice. *Cognitive and Behavioral Practice, 10*, 275-277.
- Schoenwald, S.K., & Henggeler, S.W. (2004). A public health perspective on the transport of evidence based practices. *Clinical Science and Practice, 11*, 360-363.
- Schoenwald, S.K., Henggeler, S.W., Brondino, M.J., & Rowland, M.D. (2000). Multisystemic therapy: Monitoring treatment fidelity. *Family Process, 39*, 83-103.
- Schoenwald, S. K., Henggeler, S. W., & Edwards, D. (1998). *MST Supervisor Adherence Measure*. Charleston, SC: MST Institute.
- Schoenwald, S.K., & Hoagwood, K. (2001a). Effectiveness, transportability, and dissemination of interventions: What matters when? *Psychiatric Services, 52*, 1179-1189.
- Schoenwald, S.K., & Hoagwood, K. (2001b). Effectiveness and dissemination research: Their mutual roles in improving mental health services for children and adolescents. *Report on Emotional & Behavioral Disorders in Youth, 2* (3-4, 18-20).
- Schoenwald, S.K., Letourneau, E.J., & Halliday-Boykins, C.A. (2005). Predicting adherence to a transported family-based treatment for youth. *Journal of Clinical Child and Adolescent Psychology, 34*, 658-670.
- Schoenwald, S.K., & Reid, J. (Co-Chairs) (2006, March). *Community-based model programs panel: Implementing with fidelity*. Blueprints Conference 2006: Evidence-based programs, research-to-practice conference. Denver, CO.
- Schoenwald, S.K., Sheidow, A.J., Letourneau, E.J., & Liao, J.G. (2003). Transportability of Multisystemic Therapy: Evidence for multi-level influences. *Mental Health Services Research, 5*, 223-239.

- Schoenwald, S.K., Sheidow, A.S., & Letourneau, E.J. (2004). Toward effective quality assurance in evidence-based practice: Links between expert consultation, therapist fidelity, and child outcomes. *Journal of Child and Adolescent Clinical Psychology, 33*, 94-104.
- Schoenwald, S.K., Sheidow, A.J., Chapman, J.E., Carter, R.E., & Letourneau, E.J. (2006, March). Transportability of evidence-based treatments: Testing context effects on implementation and outcomes. In S.K. Schoenwald, Chair, *Key Findings in the Transport and Implementation of Evidence-Based Treatments to Community Settings*. Joint Meeting on Adolescent Treatment Effectiveness (JMATE). Baltimore, MD.
- Sexton, T.L., & Alexander, J.F. (2003). Functional family therapy: A mature clinical model for working with at-risk adolescents and their families. In T.L. Sexton, G.R. Weeks, & M.S. Robbins (Eds.), *Handbook of Family Therapy* (pp. 323-350). New York: Brunner-Routledge.
- Scholonskas, D.E., Syracuse-Siewert, G., Rounsaville, B. J., Ball, S. A., Nuro, K.F., & Carroll, K.M. (2005). We don't train in vain: A dissemination trial of three strategies of training clinicians in cognitive-behavioral therapy. *Journal of Consulting and Clinical Psychology, 73*, 106-115.
- Southam-Gerow, M.A., Austin, A.A., & Hershberger, A.M. (in press). Transportability and dissemination of psychological treatments: Research models and methods. In R. G. Steele, T. D. Elkin, & M. C. Roberts (Eds.), *Handbook of Evidence-Based Therapies for Children and Adolescents*. New York: Springer.
- Strother, K. B., Swenson, M. E., & Schoenwald, S. K. (1998). *Multisystemic therapy organizational manual*. Charleston, SC: MST Institute.
- Weisz, J.R., (2000). Lab-clinic differences and what we can do about them. I: The Clinic-Based Treatment Development Model. *Clinical Child Psychology Newsletter, 15*, 1-3, 10.